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(54) ARTIFICIAL LASH EXTENSIONS

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(52) **U.S. Cl.**

(58) Field of Classification Search

(56) References Cited

U.S. PATENT DOCUMENTS

1,021,063 A 3/1912 Miller 1,450,259 A 4/1923 Charles

1,831,801 A	11/1931	Birk
1,897,747 A	2/1933	Birk
2,013,011 A	9/1935	Sheldon
D101,791 S	7/1936	Rauh
D129,526 S	9/1941	Hanisch
2,268,082 A	12/1941	Phillips, Sr.
2,323,595 A	7/1943	Arthur
2,392,694 A	1/1946	Rector
D154,227 S	6/1949	Alvizua
D155,559 S	10/1949	Tillmann
	(Con	tinued)

FOREIGN PATENT DOCUMENTS

CN	102975141	3/2013
CN	103027410 A	4/2013
	(Conti	nued)

OTHER PUBLICATIONS

"Amazon, Ocamo False Eyelashes Curler Stainless Steel Extension Eye Lash Applicator Remover Tweezers Clip Makeup Tools, https://www.amazon.kin/Ocamo-Eyelashes-Stanless-Extension-Applicator/dp/B07FT5XW8C?tag=googinhydr18418-21&tag=googinkenshoo-21&ascsu . . . , downloaded from internet Oct. 10, 2018 (3 pages)." (Continued)

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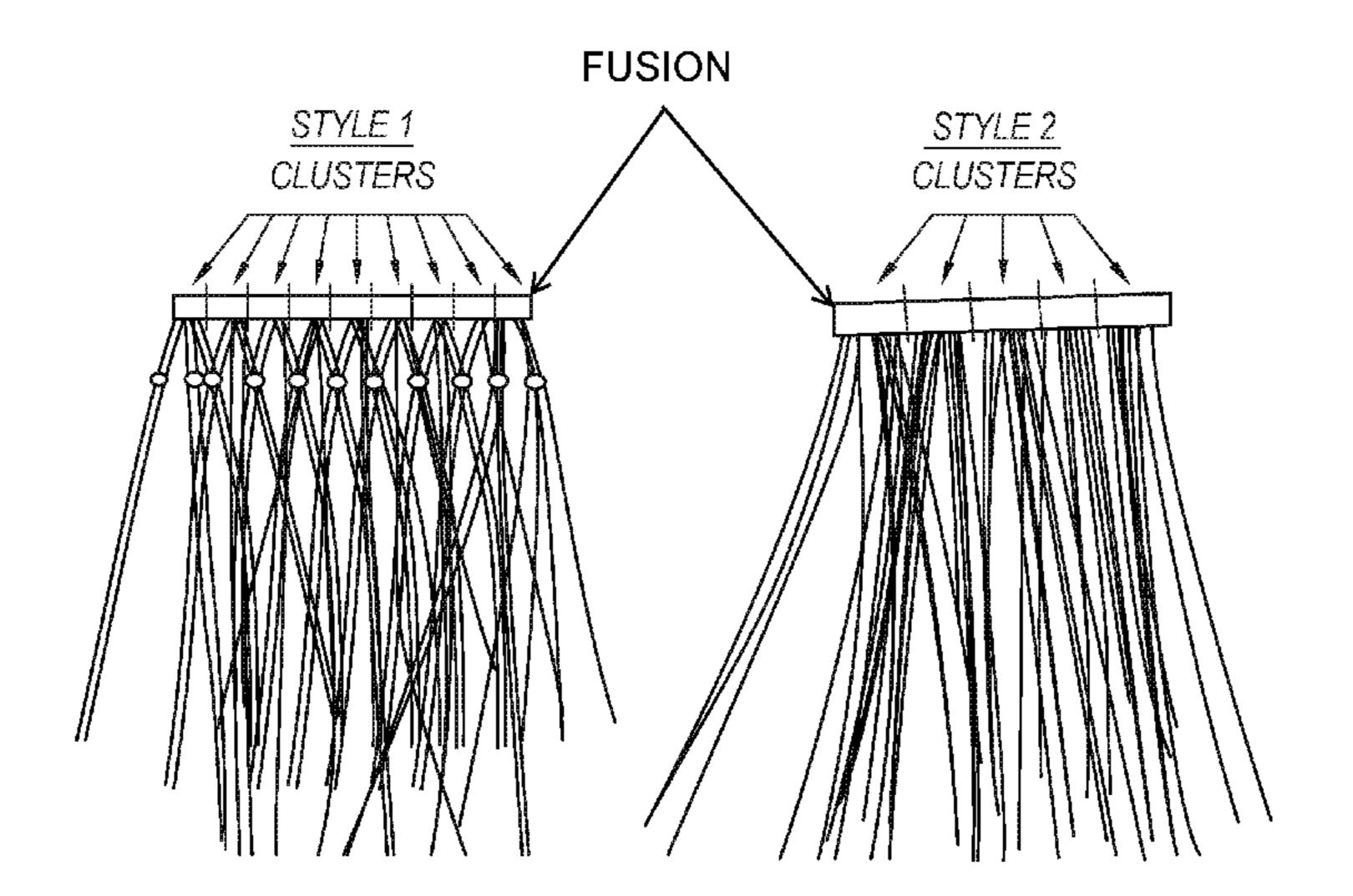
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(57) ABSTRACT

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An artificial lash extension includes clusters of artificial hairs. Each of the clusters includes at least two artificial hairs. Each of the clusters are coupled at a base formed by at least an application of heat. Each of the clusters are spaced from one another along a length of the base. The coupled clusters and the base are designed for an application under a natural lash.

20 Claims, 10 Drawing Sheets



(56)		Referen	ces Cited	D343,340 S		Frye, Jr. et al.
	U.S.	PATENT	DOCUMENTS	5,307,826 A D348,219 S		Iosilevich Goldberg
	0.5.	17111/11	DOCOME	5,322,166 A		Crowther
2,618,27	9 A	11/1952	Reiffert	5,368,052 A		Finamore
, ,		11/1957		5,377,700 A D358,312 S		Harris Keenan
, ,		1/1962		5,411,775 A		Wilson
3,032,04		5/1962 5/1962		5,419,345 A		Kadymir
3,174,32			Williams	D359,583 S	6/1995	Abbo
, ,		4/1966		D368,495 S		Rypinski
, ,		1/1967		5,533,529 A 5,547,529 A	7/1996 8/1996	
3,343,55 3,392,72			Steffen Hanlon	D373,726 S	9/1996	
3,447,54			Osher B29C 69/003	5,571,543 A	11/1996	Song et al.
, ,			132/201	D379,923 S		De Baschmakoff
3,454,01		7/1969		D380,616 S D382,198 S		Leslie et al. Mulhauser et al.
3,478,75 3,547,13		11/1969 12/1970	Martin, Jr.	D386,808 S	11/1997	_
3,557,65		1/1971		D387,483 S	12/1997	
3,561,45			Oconnell	D388,549 S		Mouyiaris et al.
3,625,22		12/1971		5,746,232 A 5,765,571 A	5/1998 6/1998	Martin et al. Dinnel
3,645,28 3,670,74		2/1972 6/1972		D397,040 S	8/1998	
3,703,18		11/1972		5,813,418 A	9/1998	
3,828,80			Windsor	D403,922 S		Terracciano et al.
3,833,00			Jacobs	D404,531 S 5,894,846 A	1/1999 4/1999	Bakic et al.
3,900,03			Masters	5,896,996 A		Chuang
D240,76 3,968,80			Bowmann Kraicer	D411,649 S	6/1999	$\boldsymbol{\varepsilon}$
3,970,09			Nelson	D418,018 S		Winsted
3,970,99			Boothroyd et al.	D418,253 S 6,003,467 A	12/1999	Bakıc Shelton-Ferrell et al.
3,971,39			Brehmer	6,005,407 A 6,016,814 A	1/2000	
3,980,09 3,982,31		9/1976 9/1976	Nelson, Jr.	6,019,107 A		Overmyer et al.
4,016,88			Cowles	6,029,674 A	2/2000	
4,029,11			Barton	6,032,609 A		Luoma
4,049,00			Saunders	6,035,861 A 6,092,291 A		Copello Cendoma
4,163,53 4,168,71			Austin Agiotis	6,109,274 A		Ingersoll
4,203,51			Current	D437,086 S		Dickert
4,205,69			Mallouf	6,174,321 B1	1/2001	Webb Robbins et al.
4,225,69			McCormick	6,182,839 B1 D442,304 S	5/2001	
4,254,77 4,254,78			McNamee Nelson	6,230,715 B1	5/2001	
4,284,09			Buretta	D443,471 S		Lillelund et al.
4,296,76		10/1981		6,247,476 B1 6,257,250 B1		Sartena Sartena
,			Kettlestrings	6,265,010 B1	7/2001	
4,299,24	Z A	11/1981	Choe A41G 5/02 132/53	D448,927 S		Vazquez
4,360,03	3 A	11/1982	Schmehling	6,302,115 B1	10/2001	
4,395,82	4 A	8/1983	Puro	6,308,716 B1 D452,151 S	10/2001 12/2001	
D270,55			Thayer	D454,981 S		Lamagna et al.
4,458,70 4,509,53		4/1985	Holland Alfier	D456,077 S	4/2002	Etter et al.
D280,35		8/1985		D456,097 S		LaMagna et al.
D281,25			Hensley	D458,413 S 6,405,736 B2	6/2002 6/2002	Townsend
D281,82		12/1985	Bakic Ueberschaar	6,439,406 B1	8/2002	
4,600,02 4,697,85			Abraham	D463,280 S		Brozel1
4,739,77			Nelson	D463,744 S D464,565 S	10/2002	Brozell Weinstein et al.
D298,07		10/1988		D464,877 S		Weinstein et al.
4,784,71 D299.56		11/1988	Van Nieulande Bakic	6,471,515 B2	10/2002	
D299,30 D301,37			Kaprelian	D467,800 S		Chen et al.
D302,60		8/1989	±	6,494,212 B1 6,530,379 B2		Yamakoshi Iosilevich
4,865,05		9/1989		D472,675 S		Lamagna
4,934,38 4,964,42			Megna Lamatrice	D472,810 S		Gelardi et al.
D314,06		1/1991		D473,106 S		Scherer
5,010,91	4 A	4/1991	Merges	6,561,197 B2		Harrison
D318,34		7/1991		D475,616 S 6,581,609 B2	6/2003	Lambrecht
5,033,62 5,072,74		7/1991 12/1991		D479,365 S		Todeschini
5,072,74			Skaryd et al.	D480,864 S		Sayers et al.
5,117,84	6 A	6/1992	Finamore et al.	D481,946 S	11/2003	Nicholson et al.
D328,24			Nottingham et al.	D481,952 S		Orsomando
5,154,19			Irisawa Elliott	D482,495 S		Jackel-Marken
D342,0 /	1 3	12/1993	EHIOU	D482,928 S	12/2003	LIU

(56)	Referer	ices Cited	D607,332 S D615,290 S		Huntington et al. Heffner
IIC	DATENIT	DOCUMENTS	D613,290 S D617,187 S		Murray
0.5	. FAILINI	DOCOMENTS	D617,167 B		Bouix et al.
D482,934 S	12/2003	T in	D618,078 S		Cripps et al.
D482,934 S D483,232 S	12/2003		7,748,391 B2	7/2010	* *
D483,633 S		Jansson et al.	D627,103 S	11/2010	
D483,909 S		Todeschini	7,836,899 B2	11/2010	Sugai et al.
D485,359 S		McMichael et al.	D631,606 S		
6,688,315 B1		Harrison	7,896,192 B2	3/2011	Conley et al.
6,691,714 B1		Yaguchi et al.	D638,733 S	5/2011	Sullivan et al.
6,708,696 B2		Ferguson	7,938,128 B2	* 5/2011	Gueret A46B 13/023
D488,353 S	4/2004	Govrik et al.			132/200
D488,618 S	4/2004	Wekstein	D639,196 S		Sullivan et al.
D490,932 S	6/2004	Mammone	D640,005 S		Lee et al.
D491,336 S		Cecere	D640,834 S	6/2011	
D495,834 S		Todeschini	D641,106 S		Williams et al.
D496,759 S		Rodriguez	8,015,980 B2 8,025,065 B2		Rabe et al. Guliker
6,820,625 B2	11/2004		8,042,553 B2	10/2011	
D501,580 S D506,573 S		Sugawara do Grandeourt	D647,799 S		Dunwoody
D500,573 S D507,678 S		de Grandcourt Lamagna	8,061,367 B2		Rabe et al.
6,935,348 B2	8/2005		D650,669 S		Dunwoody
6,935,349 B2		Nicot et al.	D650,670 S		Dunwoody
D509,942 S		Connolly et al.	D651,082 S	12/2011	Dunwoody
D512,913 S		Gauthier	8,113,218 B2	2/2012	Nguyen
6,973,931 B1			8,127,774 B2		
6,981,814 B2		Geardino et al.	D657,496 S	4/2012	
D515,242 S	2/2006		D657,696 S		Floyd et al.
D516,247 S		Merheje	D659,330 S	5/2012	
7,000,775 B2		Gelardi et al.	8,171,943 B2		Hamano
7,036,518 B2			8,186,361 B2 D661,185 S	6/2012	Hampton
D522,376 S	6/2006		D661,183 S D661,599 S		Floyd et al.
D532,891 S		Buthier et al.	8,191,556 B2		•
D533,650 S D534,426 S	12/2006 1/2007		8,196,591 B2		Lee et al.
7,159,720 B2		Pearson	8,205,761 B2		Stull, Sr. et al.
7,168,432 B1			D663,113 S		Simms
D537,208 S		Shaljian	D664,011 S		Affonso
D540,112 S		Nichols et al.	8,225,800 B2	7/2012	Byrne
D543,662 S		Bivona et al.	D669,223 S	10/2012	Lee et al.
D543,815 S	6/2007	Metcalf	D670,030 S		Nguyen
D543,850 S	6/2007	Legros	D673,325 S		Martines
D544,148 S		Bivona et al.	8,342,186 B2		Freelove
D544,202 S		Markfelder	8,347,896 B2		
D545,396 S		Casey et al.	D679,590 S D679,591 S		Stull, Sr. et al. Stull, Sr. et al.
7,228,863 B2		Dumler et al.	D679,591 S D679,592 S		Stull, Sr. et al.
D546,002 S		Bowen	D679,592 S D679,595 S		Stull, Sr. et al.
D547,940 S D559,457 S		Sandy Garland et al.	D679,596 S		Stull, Sr. et al.
D555,457 S	2/2008		D682,103 S		Jedlicka et al.
D561,942 S		Khubani	D682,688 S		Murray
7,331,351 B1			8,434,500 B2	5/2013	Alex
D563,157 S		Bouveret et al.	D686,495 S	7/2013	Murray
D563,616 S	3/2008	Lynde et al.	D690,419 S	9/2013	
D563,728 S		Welch, III	8,528,571 B2		_
7,343,921 B2		Salinas	•		Johnson-Lofton
D569,041 S		Azoulay	8,578,946 B2 8,596,284 B2		
D569,553 S	5/2008		0,390,284 BZ	12/2013	Byrne A41G 5/02
7,374,048 B2		Mazurek	8,616,223 B2	12/2012	132/201 Rabe et al.
D571,543 S D573,308 S		Sungadi Wittke-Kothe	, ,		Purizhansky et al.
D575,904 S	8/2008		8,657,170 B2		Martinez
D579,059 S	10/2008	•	D700,799 S		Ludeman et al.
7,469,701 B1		Bernard	D702,510 S	4/2014	
D584,449 S			8,701,685 B2		\mathcal{E}
D587,529 S	3/2009	•	D707,392 S	6/2014	Yu et al.
D588,746 S	3/2009		D707,556 S		
D591,599 S	5/2009	Okin et al.	8,739,803 B2		Freelove
D592,923 S		Konopka	8,752,562 B2		
7,533,676 B2		Sthair	D709,129 S	7/2014	
D595,054 S		Whitaker	,	8/2014	
,	9/2009		D713,217 S		Micara-Sartori et al.
,		Dibnah et al.	D714,494 S		Vasquez et al.
7,000,519 B2	10/2009	Dinh A41G 5/02	8,826,919 B2		
D604.550 C	11/2000	Dahingan et el	D716,498 S	10/2014	
,		Robinson et al.	D717,038 S	11/2014	
7,610,921 B2			8,875,718 B2		
D605,514 S	12/2009	AA COCI	0,001,/41 BI	11/2014	Mattson et al.

(56)		Referen	ces Cited	D835,465			Son et al. Riedel et al.
	U.S.	PATENT	DOCUMENTS	D836,432 10,149,528	B2	12/2018	Erickson et al.
	0 0 0 4 - 4 4 - D 0	44 (2044	3	D836,943 D837,653			Klieman Meranus
	8,881,744 B2 D718,901 S		McKinstry Parker	D837,033 D840,104			Hussain et al.
	·		Yeo et al.	10,264,837		4/2019	
	8,967,158 B2		Sanbonmatsu	D847,631			Villbrandt
	9,004,299 B2	4/2015		D847,632 D848,795		5/2019	Villbrandt Butler
	9,027,568 B2 9,044,076 B2	5/2015 6/2015	Lee Temple	D850,715		6/2019	
	, ,	7/2015	-	D852,412			Grund et al.
	9,107,461 B2		Martins et al.	10,362,823 D863,419			Hill et al. Oguma et al.
	D738,579 S D738,611 S		Owens et al.	D863,679		10/2019	•
	9,149,083 B1	10/2015	+.	10,433,607		10/2019	
	9,155,345 B2		Nisim et al.	D867,664 D867,668		11/2019 11/2019	
	9,179,722 B2 D746,046 S	11/2015 12/2015		10,479,566			Doyle et al.
	,		Lambridis et al.	D871,673	S	12/2019	Qureshi et al.
	/ /		Schroeder	10,532,861			Kimmel et al.
	9,254,012 B2 D751,904 S	2/2016	Pham Landrum et al.	D877,416 10,660,388		3/2020 5/2020	
	9,277,777 B2		Lee et al.	D890,430	S	7/2020	Lotti
	D753,455 S	4/2016	Hyma et al.	10,721,984		7/2020	
	D753,881 S	-	Hussain et al.	D895,201 D895,958		9/2020 9/2020	Guo et al.
	9,314,085 B2 D755,577 S	4/2016 5/2016		D909,680			Hussain et al.
	D757,274 S		Gelb et al.	D914,965		3/2021	
	D758,009 S		Berkos	D917,153 D918,475		4/2021 5/2021	Denei et al.
	9,339,072 B2 9,351,752 B2	5/2016 5/2016		D920,400		5/2021	
	D761,489 S		Krakovszki	D920,465			Bould et al.
	D762,433 S	8/2016	· Č	D930,788 D932,101		9/2021 9/2021	Roth Davis et al.
	D764,688 S D765,909 S		Robinson et al. Marchica et al.	2001/0023699			Matthews
	9,439,465 B2	9/2016		2001/0035192			Townsend
	/ /	9/2016		2001/0037813 2002/0056465		11/2001 5/2002	
	9,456,646 B2 9,462,837 B2	10/2016		2002/0030403		7/2002	
	9,468,245 B2		•	2002/0114657		8/2002	
	9,486,025 B1			2002/0198597 2003/0005941		1/2002	Godfrey Iosilevich
	9,504,285 B2 D773,915 S	11/2016		2003/0003941			Norman et al.
	D775,270 S			2003/0155317			McNeeley et al.
	9,516,908 B2		Miyatake et al.	2003/0226571 2004/0011371		1/2003	Rahman Harrison
	, ,	2/2017	Dınh Seawright	2004/0011371		1/2004	
	D783,899 S	4/2017	. •	2004/0211436	A 1	10/2004	Knight
	D783,901 S		Kim et al.	2005/0061341		3/2005	
	D784,615 S 9,622,527 B2		Choi Nguyen	2005/0098190 2005/0098191		5/2005 5/2005	
	D788,556 S			2005/0115581		6/2005	
	9,730,481 B2	8/2017		2005/0166939		8/2005	
	D796,582 S D800,966 S	9/2017 10/2017		2005/0194015 2005/0247326		9/2005 11/2005	
	D805,135 S	12/2017		2005/0247520		11/2005	
	D806,315 S			2005/0252518		11/2005	
			Jang et al. Harris et al.	2006/0065280			Cheung
	9,848,662 B2	12/2017		2006/0065281 2006/0081267		3/2006 4/2006	
	D810,534 S	2/2018	Liu	2006/0081207			Nwokola
	D810,543 S D811,872 S	2/2018 3/2018	Astradsson et al.	2006/0124658			Coe et al.
	D811,872 S D814,107 S		Lotti et al.	2006/0129187		6/2006	
-	D814,260 S	4/2018	Dhubb	2006/0142693 2006/0175853		6/2006 8/2006	Kahen Anderson et al.
	9,930,919 B1 D817,132 S		Branker et al.	2006/01/3833		8/2006	
	9,993,373 B2	5/2018 6/2018	Nassif et al.	2006/0180171		8/2006	
	D823,538 S	7/2018	Ruggaber	2006/0266376		11/2006	
	D823,683 S		Caldwell	2007/0023062			McKinstry et al.
	D825,333 S D828,013 S		Ozamiz et al. Van Wijngaarden et al.	2007/0050207 2007/0084749			Merszei Demelo et al.
	D828,014 S		Van Wijngaarden et al.	2007/0157941			Awad et al.
	D828,629 S	9/2018	Hussain	2007/0157944			Catron et al.
	D829,381 S	9/2018		2007/0199571			McCulloch
	D830,170 S D832,701 S	10/2018 11/2018		2007/0221240 2007/0227550		10/2007	Junsuh Lee Merszei
	D832,702 S			2007/0272263			

(56)	Referer	ices Cited		2015/0114422			Abraham et al.	
U.S.	PATENT	DOCUMENTS		2015/0114423 2015/0128986	5 A1	5/2015	Sanbonmatsu Stookey	
2007/0272264 A1*	11/2007	Byrne	A41G 5/02	2015/0136162 2015/0173442	_		Brouillet et al. Raouf	B65D 43/02
	12/2007		132/201	2015/0181967	7 A1	7/2015	Dinh	132/286
2008/0017210 A1	1/2008	Eaton		2015/0201691	1 A1	7/2015	Palmer-Rogers	
2008/0196732 A1 2008/0223390 A1		Merszei Brown		2015/0201692 2015/0216246			Hansen et al. Ahn et al.	
2008/0223390 A1 2008/0276949 A1	11/2008			2016/0016702	2 A1	1/2016	Siskindovich et al.	
2008/0283072 A1	11/2008			2016/0037847	7 A1*	2/2016	Tavakoli	
2009/0014023 A1 2009/0026676 A1		Waters Kurita et al.		2016/0037848	3 A1	2/2016	Lee	132/201
2009/0028625 A1		Bonneyrat		2016/0050996	5 A1	2/2016	Kwon	
2009/0071490 A1		Sthair		2016/0058088 2016/0088889		3/2016		
2009/0071492 A1 2009/0178689 A1	3/2009 7/2009	On Navarro et al.		2016/003533			Kettavong Ezechukwu	
2009/0217936 A1		Sato et al.		2016/0174645			Goldner	
2009/0217939 A1 2009/0223534 A1		Rabe et al. Green		2016/0192724 2016/0192725			Scott et al. Merszei	
2009/0223334 A1 2009/0241973 A1		Hampton		2016/0206031		7/2016		
2009/0241979 A1	10/2009	Navarro et al.		2016/0219959			Chipman et al.	
	10/2009 10/2009	Starks et al.		2016/0286881 2016/0324241		10/2016 11/2016		
2009/0266376 A1		-		2016/0324242			Hansen et al.	
2010/0043816 A1							Miniello et al.	
2010/0065078 A1 2010/0070526 A1		Reece Matias		2016/0353821 2017/0000204			Wibowo	
2010/0070320 A1		Xie et al.		2017/0006947	7 A1	1/2017	Uresti	
2010/0170526 A1*	7/2010	Nguyen		2017/0020219 2017/0049173			Beschta Dinh	
2011/0079233 A1	4/2011	Cheh	132/201	2017/0045175			Crocilla	
2011/0079235 A1	4/2011			2017/0079356		3/2017		
2011/0121592 A1	5/2011			2017/0079353 2017/0079358		3/2017 3/2017		
2011/0127228 A1 2011/0220136 A1	6/2011 9/2011	-		2017/0112214		4/2017		
2011/0226274 A1	9/2011	Turner		2017/0112215				
2011/0240049 A1 2011/0278869 A1		Kim et al.		2017/0112264 2017/0127743		4/2017 5/2017	Nakamura et al.	
		Rabe et al.		2017/0150763	3 A1		Schroeder	
	12/2011			2017/0208885 2017/0231309		7/2017 8/2017		
2012/0037177 A1 2012/0055499 A1*		Teater Makinen Sanbonmatsu	A41G 5/02	2017/0251303		9/2017		
2012/0033433 711	3, 2012	Sanoonnatsa	132/201	2017/0265550			Han et al.	
2012/0160259 A1		Nguyen et al.		2017/0311667			Passariello et al.	
2012/0174939 A1 2012/0180804 A1		Starks et al. Hochi et al.					Chipman et al.	
2012/0266903 A1	10/2012			2017/0358245		12/2017		
	12/2012			2017/0360134 2017/0360135				
2012/0318290 A1 2013/0019889 A1	12/2012 1/2013	Palmer-Rogers		2017/0360136	5 A1	12/2017	Ferrier et al.	
2013/0032162 A1	2/2013	Major		2018/0065779 2018/0098591		3/2018	Chiba Leeflang	
2013/0042881 A1 2013/0042884 A1		Mutchler Wilkinson		2018/0098393			Hansen	
2013/0042884 A1 2013/0110032 A1		Luzon et al.		2018/0235299		8/2018		
2013/0160783 A1		Ahn et al.		2018/0242671 2018/0242672		8/2018 8/2018	Merszei Lotti	
2013/0167855 A1 2013/0167858 A1	7/2013	Kupitz Lee		2018/0242715				
	10/2013			2018/0352885		12/2018		
		Teater Makinen		2018/0352886 2019/0133223		5/2018	Schroeder et al. Le	
2013/0298931 A1 2013/0306089 A1		Samain et al. Araujo Costa		2019/0191851	1 A1	6/2019	Esposito et al.	
2013/0306094 A1	11/2013	West		2019/0254373 2019/0254374			Kim Schroeder	
2013/0312781 A1 2013/0312782 A1		Murphy Kindall		2019/0234374		3/2020		
2013/0312/02 A1 2013/0320025 A1		Mazzetta et al.		2021/0030140) A1	2/2021	Chico	
2013/0333714 A1		Merszei		Ε.		INT DATE		
2014/0011372 A1 2014/0060559 A1	1/2014 3/2014	Kato et al. Lin		F(JKEIG	n PALE	NT DOCUMENTS	
2014/0069451 A1	3/2014	Hwang		CN	203897	7379 U	10/2014	
2014/0083447 A1		Rabe et al.		CN	302315		10/2014	
2014/0110304 A1 2014/0116456 A1		Wu et al. Palmer-Rogers		CN CN	303086 304452		10/2014 10/2014	
2014/0135914 A1	5/2014	Conant		CN	305738	3664	10/2014	
2014/0216488 A1 2015/0020840 A1	8/2014 1/2015	Dinh Rabe et al.		CN CN	305916 303086		10/2014 1/2015	
2015/0020340 A1 2015/0075549 A1		Lee et al.		CN	104363		2/2015	
2015/0114421 A1	4/2015	Pham		CN	205274	4180 U	6/2016	

(56)	References Cited					
	FOREIGN PATE	NT DOCUMENTS				
CN	304049505	2/2017				
CN	304049506	2/2017				
CN	304310042	10/2017				
CN	304329374	10/2017				
CN	304329375	10/2017				
CN	304382151	12/2017				
CN	304497372	2/2018				
CN	304777737	8/2018				
CN	304859863	10/2018				
CN	304859864	10/2018				
EP	1839526	7/2009				
EP	006381257	10/2014				
EP	006381257-0002	4/2019				
EP	006381257-0003	4/2019				
GB	1021063	2/1966				
GB	1272616	5/1972				
GB	1307107	2/1973				
JP	471395	8/1972				
JP	S471395	8/1972				
JP	1978-083862	7/1978				
JP	2011500979 A	1/2011				
JP	2011122288 A	6/2011				
JP	2011177395	9/2011				
JP	2015105447 A	6/2015				
JP	3201846	1/2016				
JP	2016027220 A	2/2016				
JP	2016163699 A	9/2016				
JP	2019522125 A	8/2019				
KR	200165452	2/2000				
KR	200165452 Y1	2/2000				
KR	20090010717	10/2009				
KR	101336422 B1	12/2013				
KR	101509029	4/2015				
KR	20150140672 A	12/2015				
KR	20190035787 A	4/2019				
RU	2558482 C1	8/2015				
WO	2014163364 A1	10/2014				
WO	2018022914	2/2018				
WO	2018119034 A1	6/2018				

OTHER PUBLICATIONS

Bom Pretty, False Eyelashes Thick Natural Simulation Recyclable Curly False Eyelash Makeup Cosmetic Tools, http://www.bornprettystore.com/false-eyelashes-thick-natural-simulation-recyclable-curly-false-eyelash-makeup-cosmetic-tools-p-44675.html downloaded from internet Oct. 18, 2018 (6 pages).

Buy Korea, Plastic, False Eyelash Applicator, Multy colour, http://www.buykorea.or.kr/product-details/Plastic-False-Eyelash-Applicator-Multy-colour-3106709.html, downloaded from internet Feb. 14, 2019 (3 pages).

Buzludzha Monument, Gueorguy Stoilov circa 1980, justanotherbackpacker.com, published by blogger Rich on Apr. 29, 2014 © 2019, online, site visited Aug. 27, 2019. Downloaded from Internet, URL: http://www.justanotherbackpacker.com/ buzludzhamonument-bulgaria-ufo/ (Year: 2014).

Cosmopolitan, You've Been Applying False Eyelashes Wrong Your Whole Life, https://www.cosmopolitan.com/style-beauty/beauty/how-to/a55781/this-false-eyelash-hack-will-change-your-life/, Mar. 25, 2016 (12 pages).

Cruiser Portable Speaker, NYNE, published at thegamerwithkids. com, posted by Sam Versionone on Apr. 6, 2015 © hot listed, online, cite visited Jun. 20, 2018. Available from Internet. URL: https://thegamerwithkids.com/2015/04/06/nyne-cruiser-review-a-wireless-speaker-for-your-bycicle/ (Year: 2015).

Delicate Hummingbird, Ha! I've mastered the false lashes!, http://delicate hummingbird.blogspot.com/2011/11/ha-ive-mastered-false-lashes.htm., Nov. 10, 2011 (12 pages).

Dream Lashes Curved Volume Tweezer—3 Minute Test, https://www.youtube.com/watch7v:cw1qYeEOSD7s, downloaded from the internet Feb. 13, 2019 (1 page).

Electron Microscopy Sciences, "EMS High Precisions and Ultra Fine Tweezers." https://www.emsdiasum.com/microscopy/products/tweezers/ultra_fine.aspx Downloaded from the internet Feb. 13, 2019 (7 pages).

European Search Report issued in EP17835287A dated Feb. 11, 2020 (5 pages).

European Search Report issued in EP17884561A dated Sep. 11, 2020 (7 pages).

First Office Action issued in CN201780004312A dated May 7, 2020 (17 pages).

First Office Action issued in CN201780033755A dated Aug. 28, 2020 (8 pages).

Focallure, https://shopfocallure.com/collections/eyelashes/products/eyelash-tweezer-by-focallure, downloaded from internet Feb. 14, 2019 (1 page).

Hongjun web page, https://detail.1686.com/offer/574685154963. html?spm=a2615.7691456.newlist.75.22f96dc5Msy00t, downloaded from internet Oct. 31, 2018 (16 pages).

Image Essentials, How to wear false eyelashes without looking like you're wearing them, https://imagessentials.wordpress.com/2012/03/30/how-to-wear-false-eyelashes-without-looking-like-youre-wearing-any/, Mar. 30, 2012 (5 pages).

International Search Report and Written Opinion dated Mar. 12, 2018 in related PCT/US2017/067513 filed Dec. 20, 2017 (10 pages).

International Search Report and Written Opinion dated Dec. 19, 2019 in related PCT/US2019/057104 filed Oct. 19, 2019 (8 pages). International Search Report and Written Opinion dated Dec. 23, 2019 in related PCT/US2019/057102 filed Oct. 19, 2019 (8 pages). International Search Report and Written Opinion dated Nov. 27, 2017 in related PCT/US2017/044217 filed Jul. 27, 2017 (10 pages). Japonesque False Lash Applicator, https://japonesque.com/products/implements/false-lash-applicator/, downloaded from internet Feb. 13, 2019 (6 pages).

Lashify Gossamer Lash Cartridge https://lashify.com/collections/shop-1/products/gossamer-eye-lozenge-c-style?variant=783670738950, downloaded from internet Jun. 15, 2018 (2 pages).

Lashify Wand, https://www.instagrarn.com/p/BWgeQ8wg00S/?iqshid=zauiyw8a6v5, downloaded from internet 2019 (1 page).

MAC Cosmetics 34 Lash http://www.bornpretty/store.com/false-

MAC Cosmetics, 34 Lash, http://www.bornpretty/store.com/fa!se-eyelashes-thick-natural-simulation-recyclable-curly-false-eyelash-makeup-cosmetic-tools-p-44675.html, downloaded from internet Feb. 14, 2019 (1 page).

"Madame Madeline Lashes, Ardell Dual Lash Applicator, https://www.madamemadeline.com/online_shoppe/proddetail.asp?prod=mm62059, downloaded frominternet Oct. 18, 2018 (3 pages)."

Made in China, New Product Eyelashes Aid Eyelashes Applicator Innovative Eyelashes Curler, 2018, https://www.made-in-china.com/productdirectory.do?word=creative+eyelashe+curler&subaction=hunt&style=b&mode=and&code=0&comProvince=nolimit&order=0&isOpenCorrection=1, downloaded from internet Feb. 13 219(2 pages).

Pak Lajpall, Nail Artist Tweezers PL-1, http://www.laipall.com/proddetail.prod=nail-artists-tweezers 1, downloaded from internet Feb. 13, 2019 (1 page).

Peonies and Lilies, Bourjois 2 in 1 Tweezers and Faux & Fabulous Eyelashes, posted Oct. 24, 2012 (2 pages).

Yoyo PillBox, Alessi, amazon.com, published by Alessi on Nov. 20, 2018 © 1996-2020 Amazon.com, online, site visited Aug. 6, 2020. Available at URL: https://www.amazon.com/Alessi-Stainless-Steel-Michel-Bouquillon/dp/B07KKFQNQ6 (Year: 2018).

Kiss Nail Products, Inc.'s Third Supplemental Objections and Responses to Lashify, Inc.'s First Set of Interrogatories (Nos. 1-56) Investigation No. 337-TA-1226, Mar. 10, 2021.

Notter E. The Art of the Chocolatier: From Classic Confections to Sensational Showpieces. John Wiley & Sons; Jan. 18, 2011.

International Search Report and Written Opinion dated May 7, 2020, on application No. PCT/US2020/013561.

Troughton MJ. Handbook of plastics joining: a practical guide. William Andrew; Oct. 17, 2008.

Varga J, Ehrenstein GW, Schlarb AK. Vibration welding of alpha and beta isotactic polypropylenes: Mechanical properties and structure. Express Polymer Letters. Mar. 1, 2008;2(3):5-19.

(56) References Cited

OTHER PUBLICATIONS

Brandrup, J., Immergut, E.H., Grulke, E.A., Abe, A. and Bloch, D.R. eds., 1999. Polymer handbook (vol. 89). New York: Wiley. Satkowski, M.M., 1990. The crystallization and morphology of polyethylene and its blends.

Melting and Crystallization of Poly(ethylene Terephthalate) under Pressure, Journal of Polymer Science: Polymer Physics Edition, vol. 18, 2181-2196 (1980) @ 1980 John Wiley & Sons, Inc.

How to Apply Lashing using Sephora Bull Eye Lash Applicator, Nov. 14, 2012 youtube video, https://www.youtube.com/watch?v=yYwcYzXJX4M.

Aug. 18, 2015 "How to apply iENVY Quattro collection eyelashes" Quatro Video—https://www.youtube.com/watch?v=kW-ovIGoCmc. Ienvy https://www.ebay.eom/sch/i.html? _nkw=lenvy&norover= 1 &mkevt=1&mkrid=711-156598-701868-2&mkcid=2&keyword= ienvy&crip=435059434779, retrieved Dec. 30, 2020.

Lindström, I., Suojalehto, H., Henriks-Eckerman, M.L. and Suuronen, K., 2013. Occupational asthma and rhinitis caused by cyanoacrylate-based eyelash extension glues Occupational medicine, 63(4), pp. 294-297.

Madame Madeline got lashes? KISS i-ENVY Premium Quattro 01 Lashes (KPE62), i-ENVY Strip Lashes by KISS—Madame Madeline Lashes, retrieved Dec. 30, 2020.

I-ENVY by Kiss SO WISPY #01 Strip Eyelashes KPE58 False Lashes Black 1 pair NEW, https://www.picclickimg.com/d/w1600/picV2923114108781i-ENVY-by-Kiss-SO-WISPY-01-Strip-Eyelashes.ipg) retrieved Dec. 30, 2020.

"Kiss Ever EZ Trio Lashes Medium Combo 30 EA 2pk,https://www.ebay.com/urw/Kiss-Ever-EZ-Trio-Lashes-Medium-Combo-30-EA-2pk/product-reviews/111 7964400?pgn=2#Retrieved on Mar. 9, 2021".

"Amazon.com: Kiss Ever Ez Lahes 30 Count Trio Lashes in Various Lengths 57927: Beautyhttps://www.amazon.com/Kiss-Lahes-Lashes-Various-Lengths/dp/BOOJH7SR4SRetrieved on Mar. 9, 2021".

"BL Kiss Envy Quattro 01 Lashes—Two Pack, https://www.ebay.ca/itrn/BL-Kiss-I-Envy-Quattro-O 1-Lashes-Two-PACK-/293706028541, Retrieved on Dec. 30, 2020".

Pinterest search for False Eyelases: Kiss Premium Lashes, i-ENVY by KISS Premium Lashes, Lashes, False eyelashes, eyelashes; https://www.pinterest.es/amp/pin/449515606533816815/, Retrieved Dec. 30, 2020.

Pinterest search from kissusa.com; https://www.pinterest.com.au/pin/19562579608263895/; Retrieved Dec. 30, 2020.

"KISS—I-Envy by Kiss Premium Quattro 02 Lashes, https://www.ubuy.com.kw/en-sa/catalog/product/view/id/37236, Retrieved Dec. 30, 2020".

KISS—So Wispy 01 Strip Eyelashes, https://picclick.com/i-ENVY-by-Kiss-SO-WISPY-01-Strip-Eyelashes-292311410878.html; Retrieved Dec. 30, 2020.

KISS—i-ENVY Premium Quattro 01 Lashes, https://www.madamemadeline.com/online_shoppe/proddetail.asp?prod=mmKPE62; Retrieved Dec. 30, 2020.

"KISS—i-ENVY Premium Quattro 01 Lashes, https://www.bicoastalbeauti.com/shop/kiss-brand-lashes/kiss-i-envy-premium-quattro/; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Premium Quattro 01 Lashes, https://www.biloltd.net/product-p/60351.htm; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Premium Quattro 01 Lashes, https://www.cashmerecosmetics.com/product/kiss-i-envy-quattro-01-ashes/; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Premium Quattro 01 Lashes, https://www.ebay.com/p/1044019861; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Premium Quattro 01 Lashes, https://www.ussalonsupply.com/Kiss-I-Envy-Quattro-01-Lashes-_p_120305.html; Retrieved Dec. 30, 2020".

"KISS—I-ENVY by Kiss Premium Quattro 02 Lashes, https://www.walmart.com/ip/Kiss-I-Envy-Quattro-02-Lashes/187353459, Retrieved Dec. 30, 2020".

"KISS—i-ENVY Premium Quattro 01 Lashes, https://www.beautyproductsusa.com/home/322-kiss-i-envy-strip-eyelash-quattro-01-kpe62.html; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Strip Eyelashes—Pack of 2,https://www.ebay.com.au/itm/Kiss-I-Envy-Strip-Eyelashes-Pack-of-2-Choose-your-Style/183303124469; Retrieved Dec. 30, 2020".

"KISS—I-ENVY Eye Lash Adhesive (6g Individual, Clear) Reviews; https://www.influenster.com/reviews/kiss-i-envy-eye-lash-adhesive-6g-individual-clear;Retrieved Dec. 30, 2020".

"KISS—i-ENVY 100% Human Eyelash So Wispy 03;https://www.pinterest.co.kr/pin/308285536984155041/Retrieved Dec. 30, 2020". "KISS—i-ENVY Premium Quattro 01 Lashes, https://www.ammancart.com/products/kiss-i-envy-premium-quattro-01-ashes-kpe62; Retrieved Dec. 30, 2020".

"KISS—I-Envy by Kiss Premium Quattro 02 Lashes, https://www.lashaddict.nl/kiss-i-envy-lashes-quattro-02.html, Retrieved Dec. 30, 2020".

"KISS—i-ENVY Pre-Cut Lashes, https://www.shopbeautylicious.com/products/kiss-i-envy-pre-cut-lashes; Retrieved Dec. 30, 2020". "KISS—i-ENVY Premium Quattro 01 Lashes, https://www.amazon.ca/Kiss-ienvy-quattro-Makeup-Count/dp/B016SKJJKM; Retrieved Dec. 30, 2020".

"KISS—I-ENVY by Kiss 100% Human Pre Cut Eyelash Quattro 02 Lashes, https://www.pinterest.cl/pin/576038608568497288/?amp_client_id=CLIENT_ID(_)&mweb_unauth_id=&from_amp_pin_page=true, Retrieved Dec. 30, 2020".

"Pinterest—How to Apply iENVY Quattro collection eyelashes,https://www.pinterest.com/pin/43347215141316080/Retrieved Dec. 30, 2020". "KISS—i-ENVY Premium Quattro 01 Lashes, https://www.loveyelashes.com/bfont-colorgreenstrip-lashesfontb-299-envy-by-kiss-quattro-01-(1555,129,1,48)p.html#; Retrieved Dec. 30, 2020". "KISS—I-ENVY Individual Eye Lash Adhesive; https://www.modembeauty.com/cosmetics/lashes/false-lashes/product/26961-i-envy-individual-eyelash-adhesive-retail.html;Retrieved Dec. 30, 2020". "KISS—iENVY Collectionienvybykiss.com; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Quattro 01 Lashes, pack of 3https://www.amazon.com/iEnvy-Kiss-Quattro-Lashes-Pack/dp/B06XGBTCHW; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Quattro 02 Lashes, pack of 3https://www.amazon.com/iEnvy-Kiss-Quattro-Lashes-Pack/dp/B017O6J2FG; Retrieved Dec. 30, 2020".

"KISS—i-ENVY Ultra Black Trio Medium Lashes, 2 pk.https://www.amazon.com/Kiss-Envy-Ultra-Black-Medium/dp/B00W2C4HPS? th=1; Retrieved Mar. 9, 2021".

"KISS—i-ENVY Trio Medium Lashes 30 Trio Lashes, 2 pk.https://www.amazon.com/Kiss-Envy-Trio-Medium-Lashes/dp/B018J0RMXU; Retrieved Mar. 9, 2021".

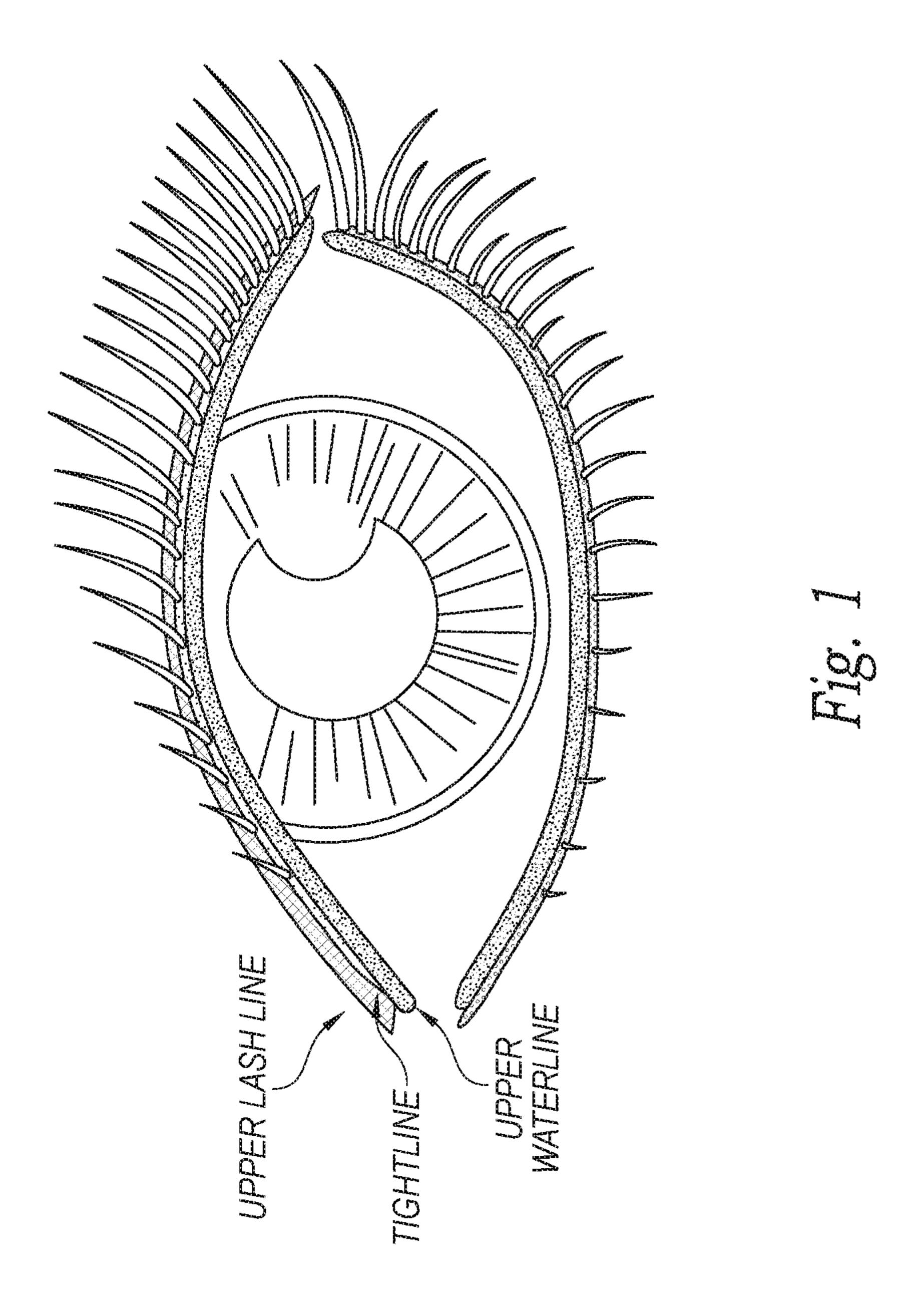
"KISS—i-ENVY Trio Lashes Ultra Volumehttps://www.unitedbeautysupply.com/product/kiss-i-envy-trio-lashes-ultra-volume-kpec/; Retrieved Mar. 9, 2021".

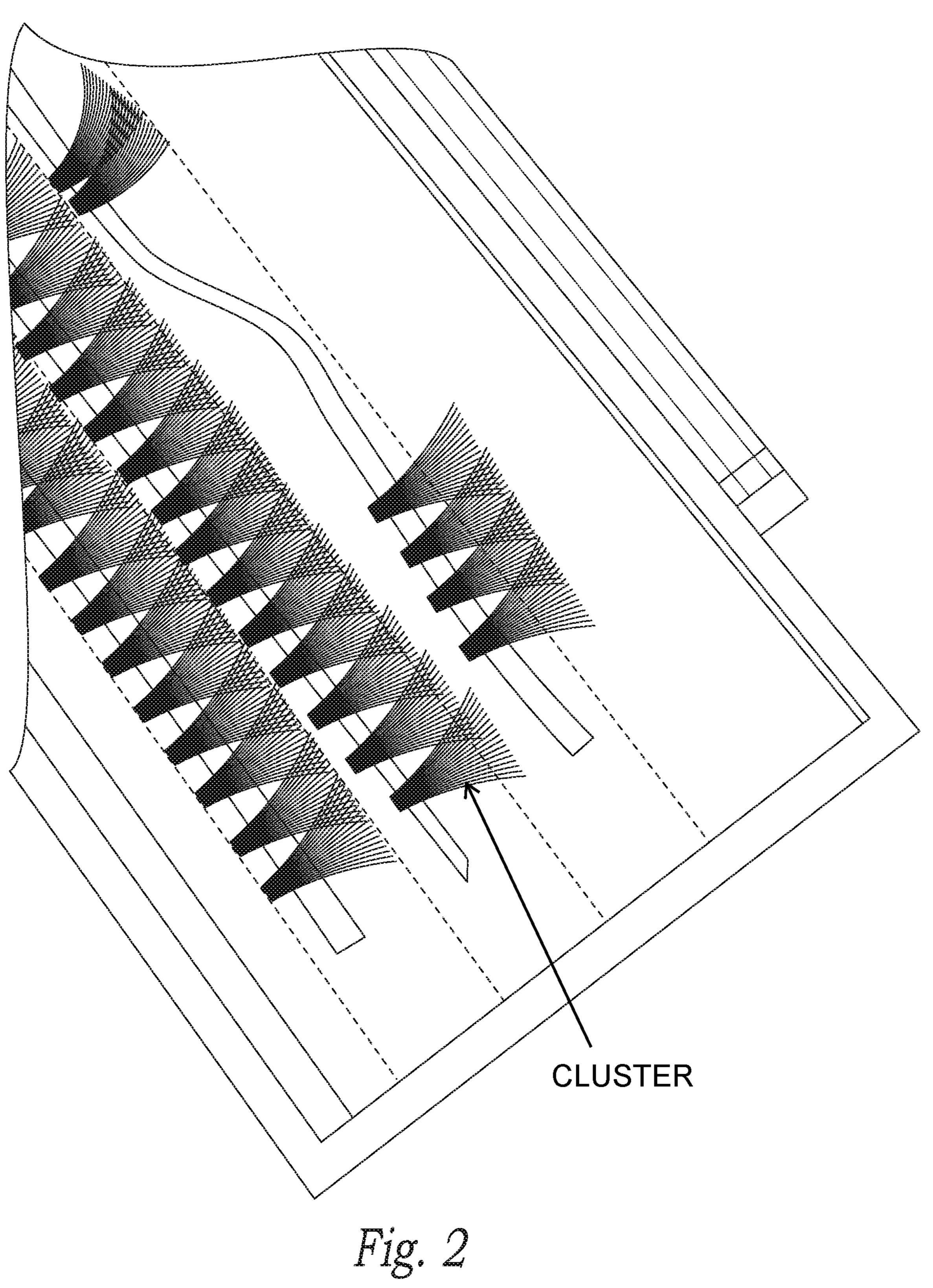
"KISS—Ever Ez Lashes 30 Count Trio Lashes in Various Lengthshttps://www.amazon.com/Kiss-Lahes-Lashes-Various-Lengths/dp/B00JH7SP4S; Retrieved Mar. 9, 2021".

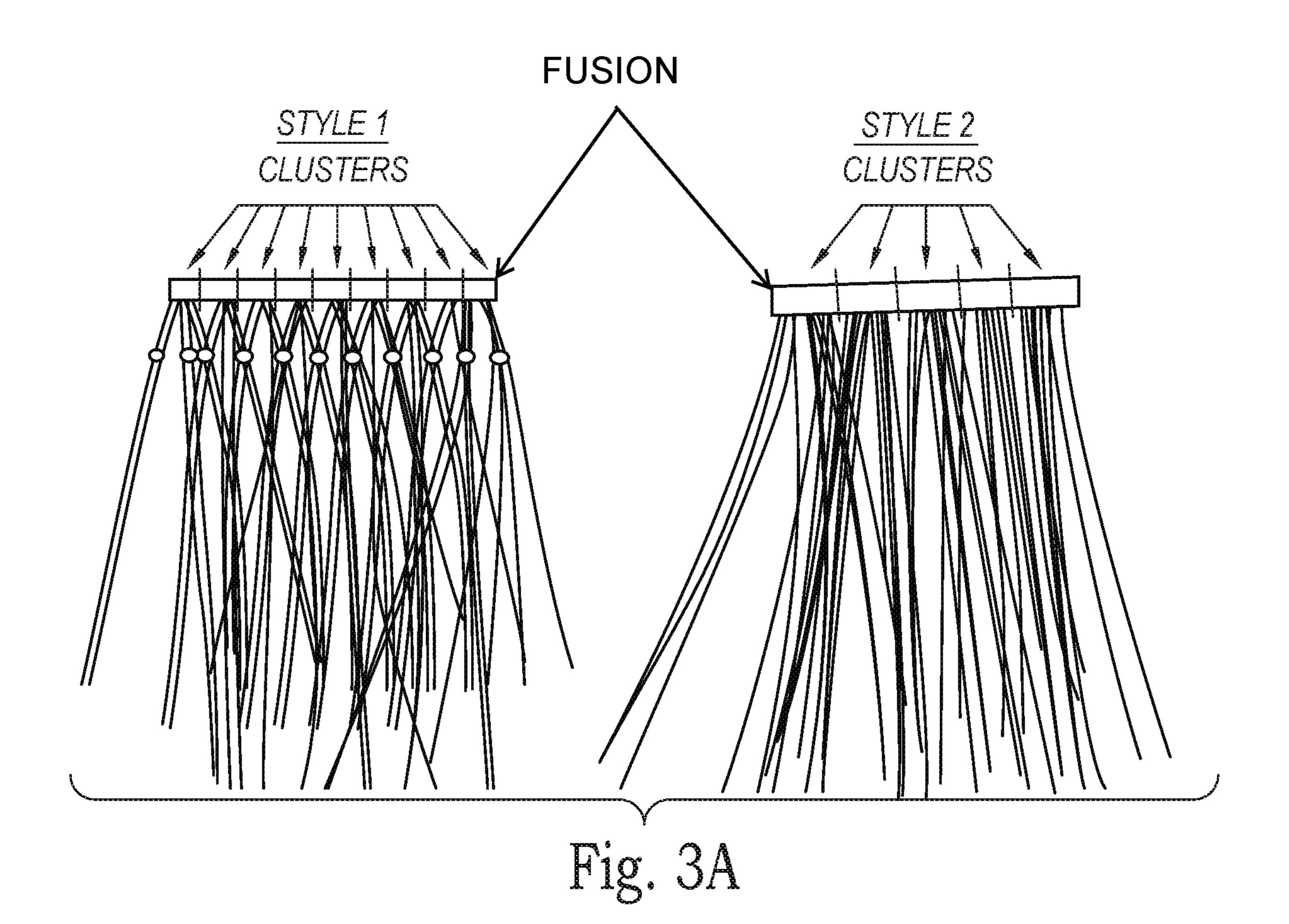
Japanese Office action dated Aug. 30, 2021, on application No. 2019-504850.

Search Report and Written Opinion dated Jan. 21, 2022, on Application No. SG. 10202106633V.

* cited by examiner







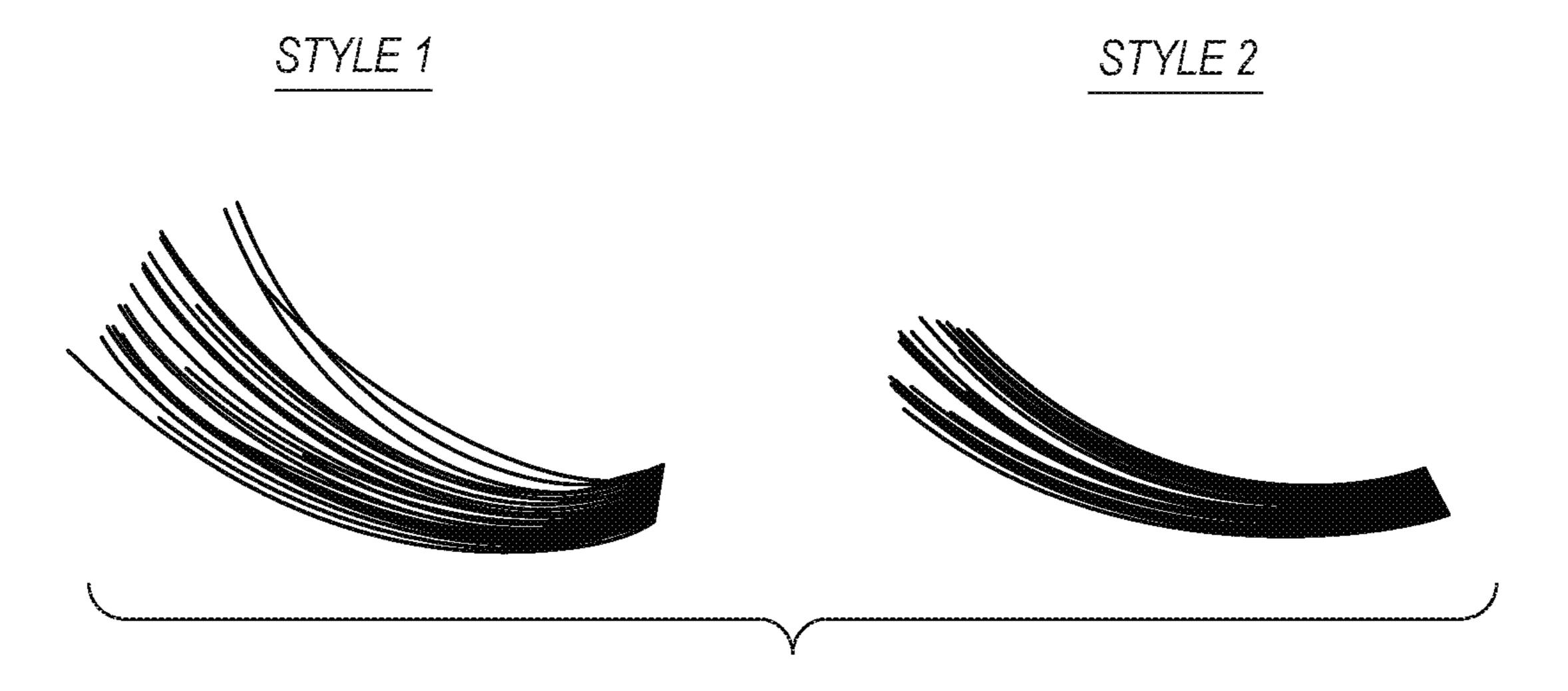


Fig. 3B

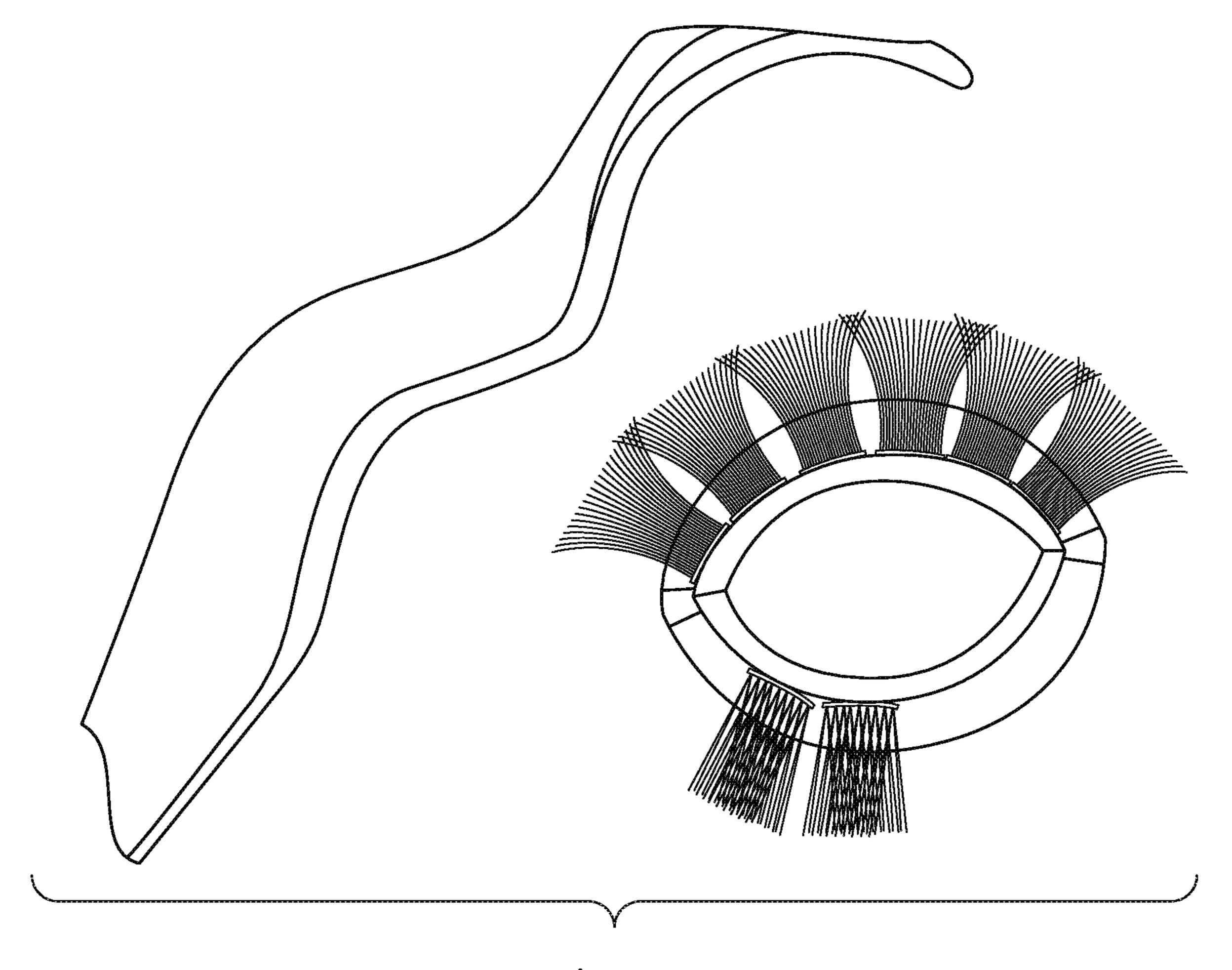


Fig. 3C

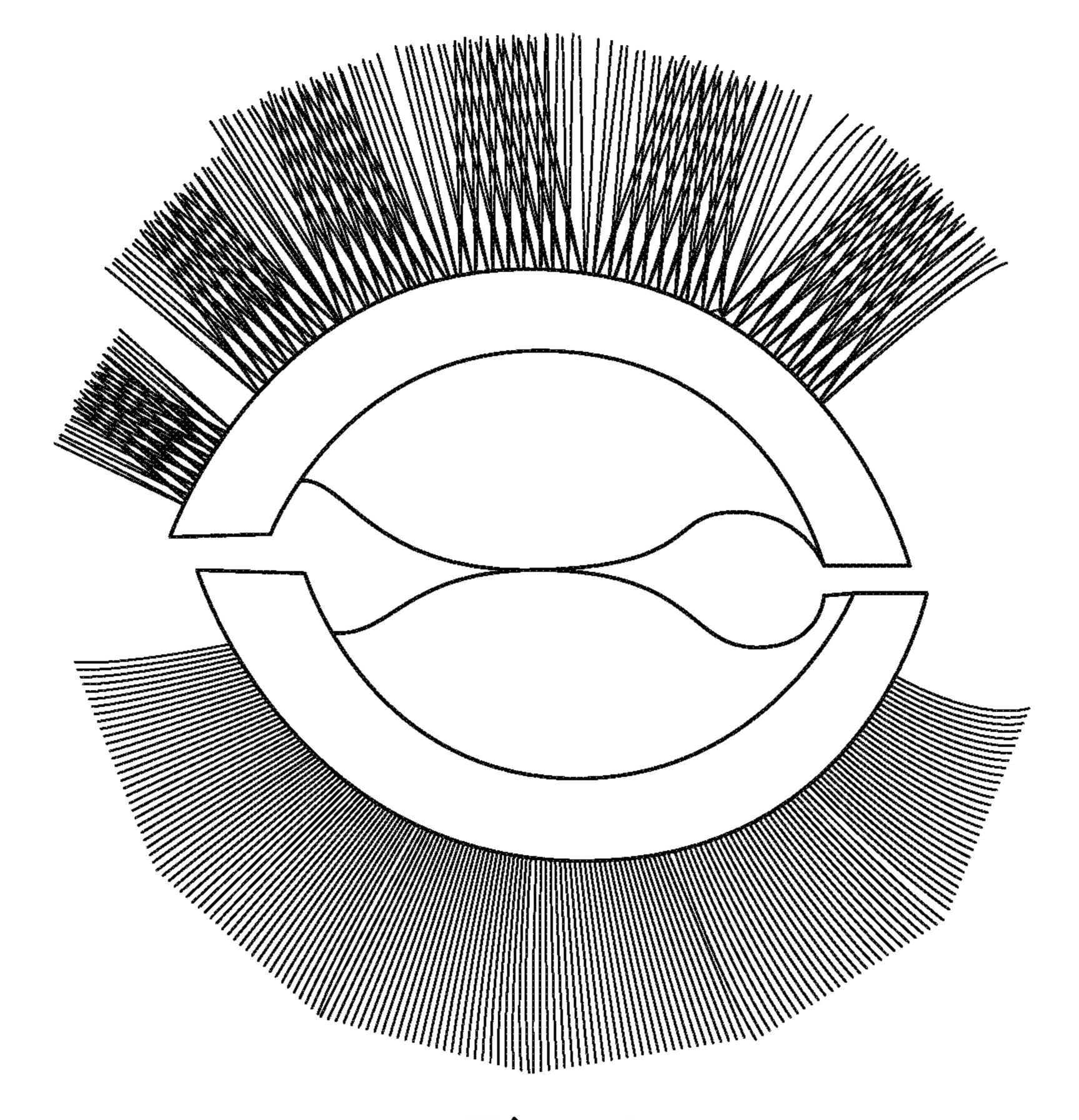


Fig. 4

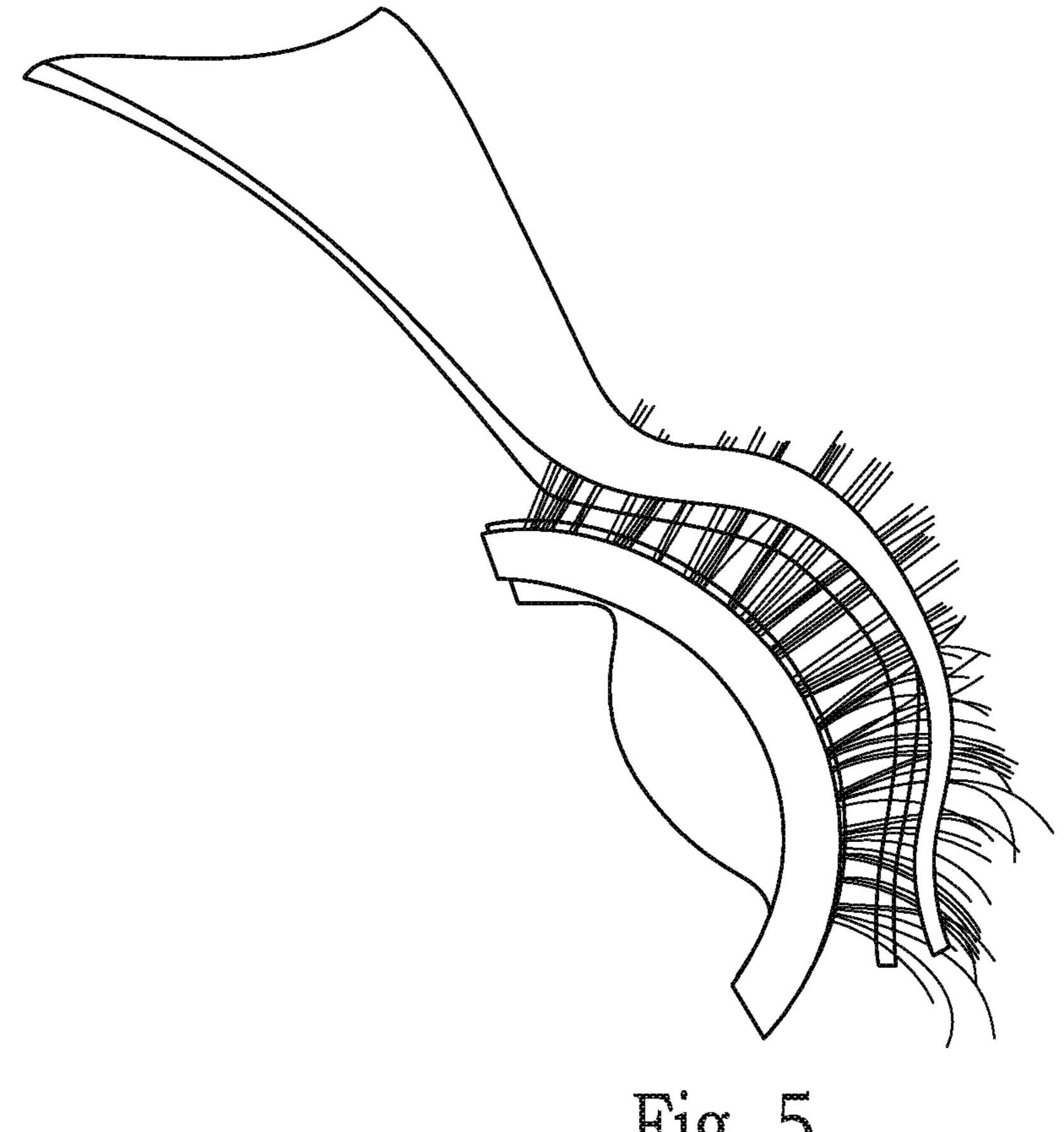


Fig. 5

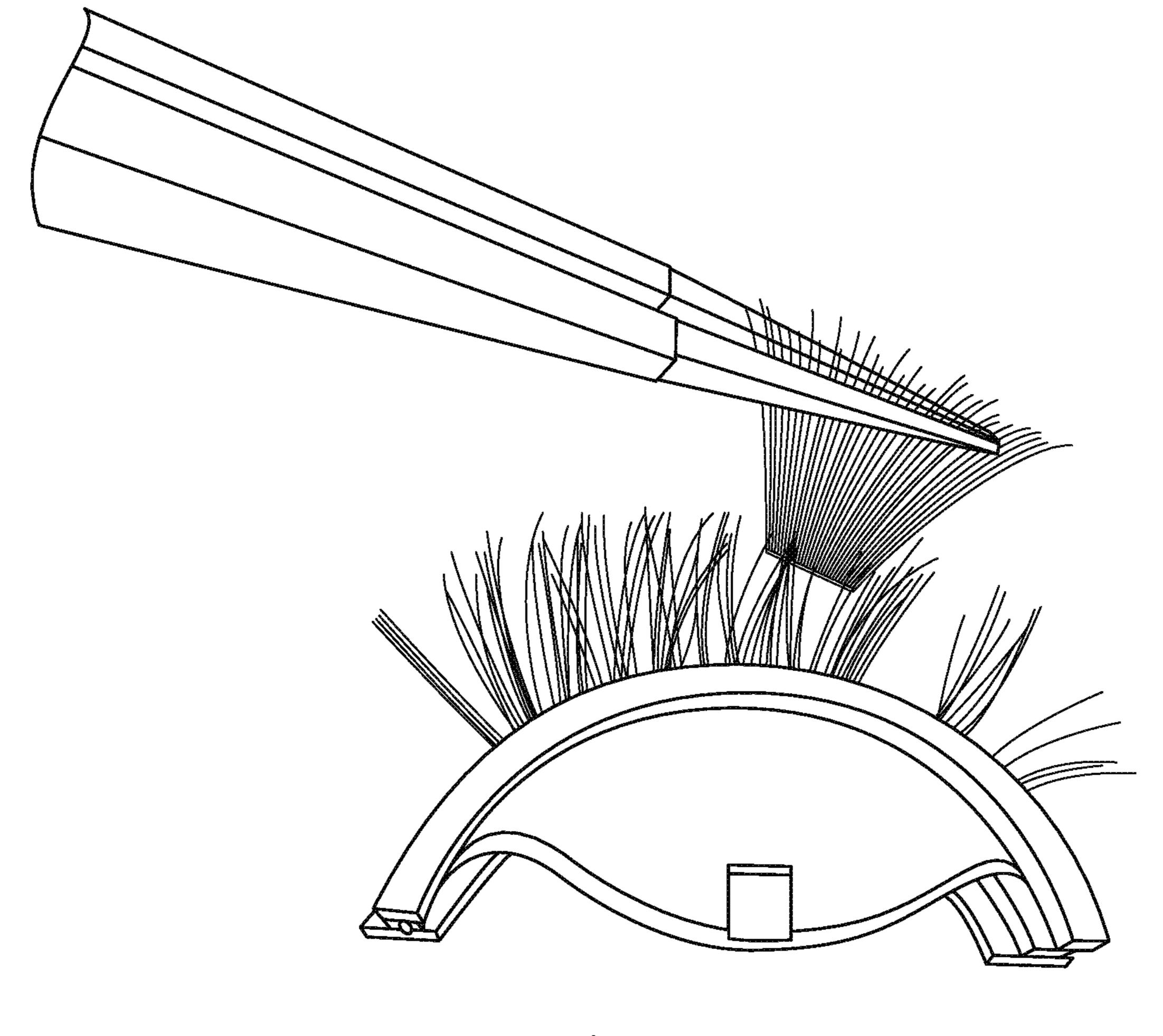
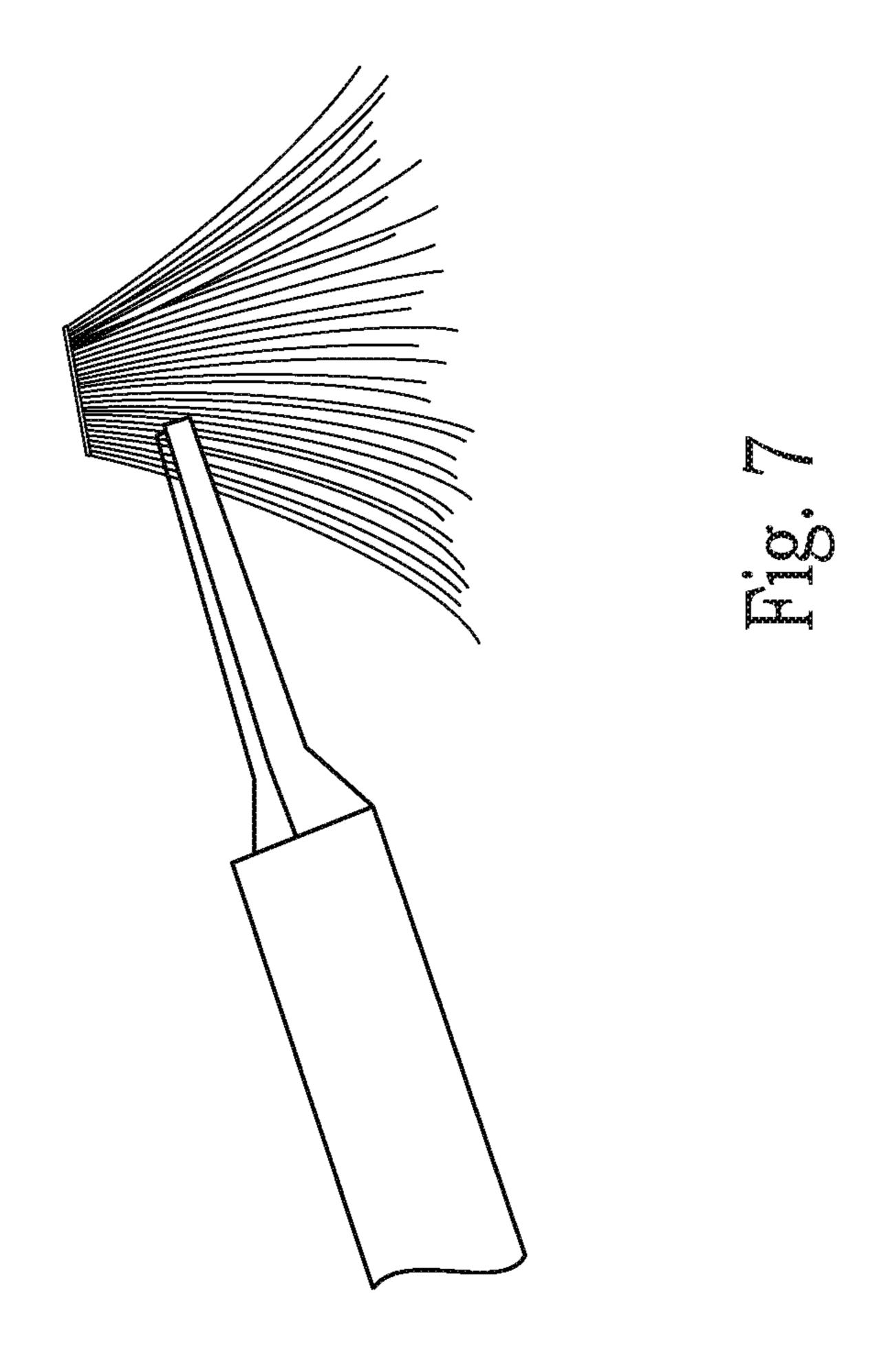


Fig. 6



<u>800</u>

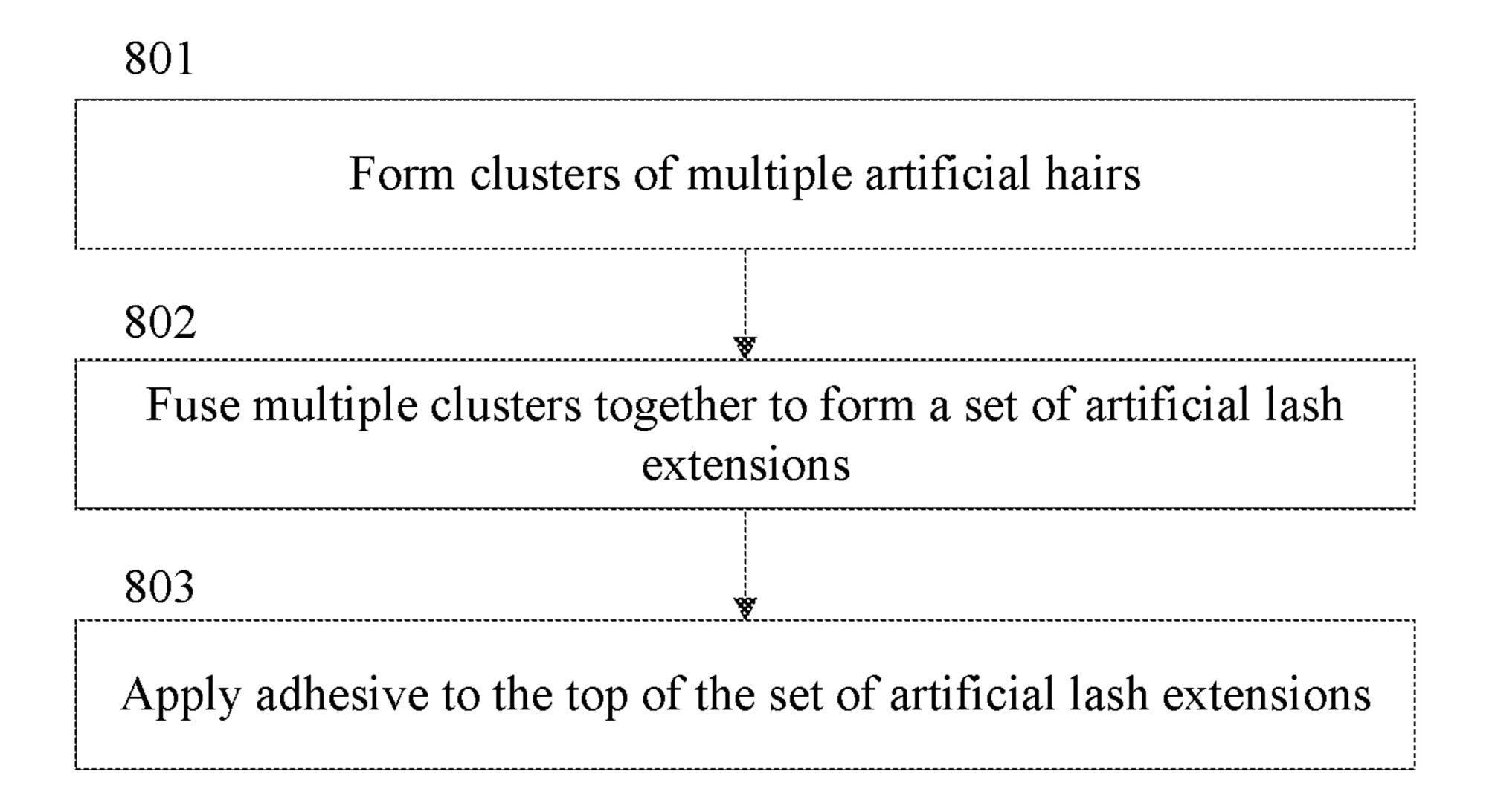


FIG. 8

<u>900</u>

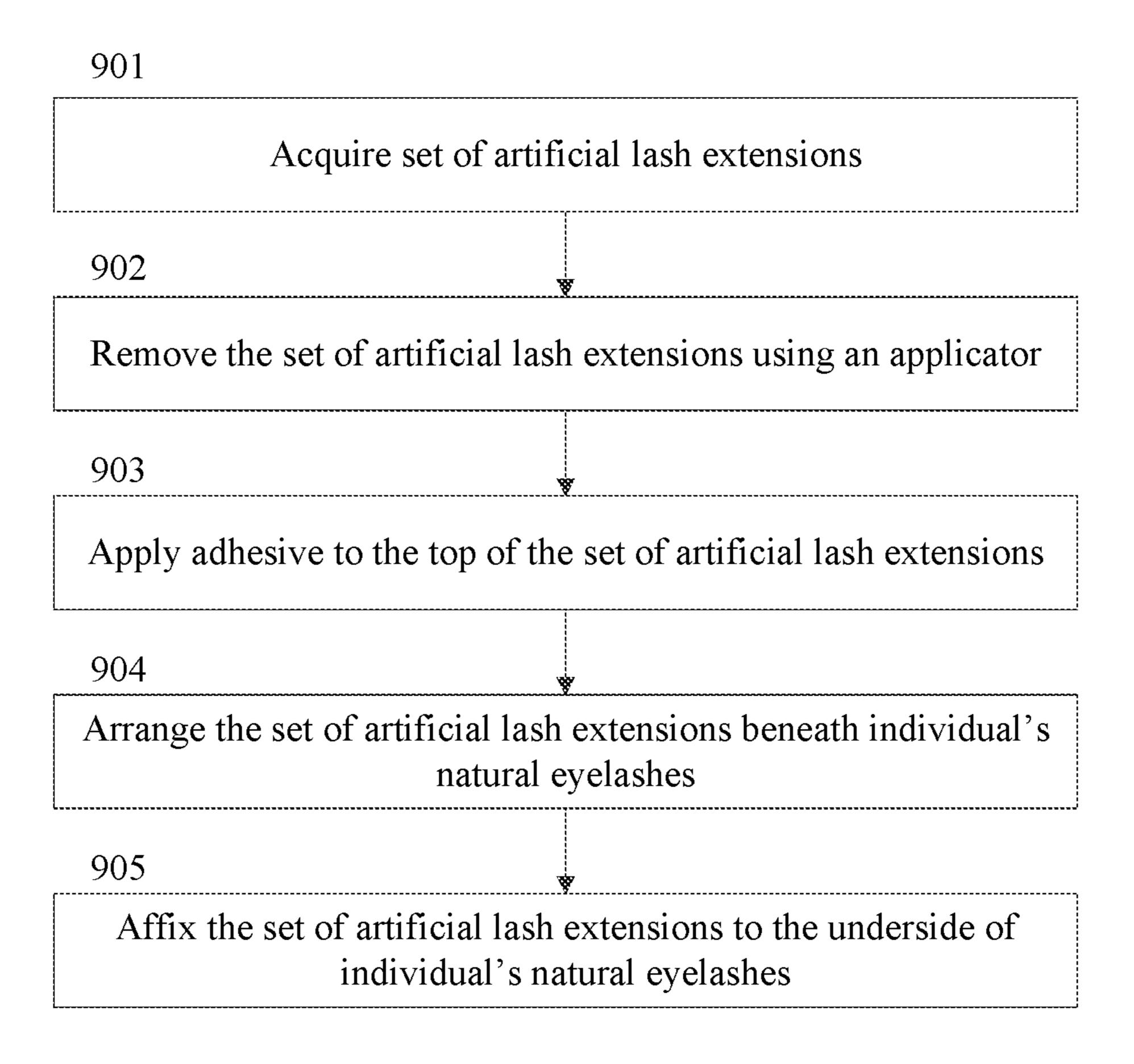


FIG. 9

ARTIFICIAL LASH EXTENSIONS

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is a continuation of U.S. patent application Ser. No. 16/556,518 filed Aug. 30, 2019, which is a continuation of U.S. patent application Ser. No. 15/968, 361 filed May 1, 2018; which is a continuation of International Application No. PCT/US17/44217 filed Jul. 27, 2017; which claims the benefit of U.S. Provisional Application No. 62/368,116 filed Jul. 28, 2016; the contents of all of which are incorporated herein by reference in their entirety herein.

FIELD OF THE INVENTION

Various embodiments concern artificial eyelashes and, more specifically, clusters of artificial eyelash extensions that can be applied to the underside of an individual's natural eyelashes.

BACKGROUND

Eyelash extensions have conventionally been used to enhance the length, thickness, and fullness of natural eyelashes. Eyelash extensions, however, must be applied to an individual's natural eyelashes one by one to avoid having the eyelash extensions stick together. Consequently, lash extension services can cost hundreds of dollars depending on the type and number of lashes used, the skill of the cosmetician, and the venue where the eyelash extensions are applied. It usually takes an experienced cosmetician one to two hours to attach a full set of eyelash extensions.

Clusters of artificial lashes have conventionally been used to enhance the length, thickness, and fullness of an individual's natural eyelashes. However, each cluster must be applied to the individual's eyelashes individually in order to avoid having the clusters of artificial lashes stick together and to ensure multiple clusters are evenly distributed across the width of the individual's lash line.

Alternatively, false eyelashes may be applied directly to an individual's eyelid. False eyelashes come in strips (and thus may also be referred to as "strip lashes") that can be trimmed to fit the width of the individual's eyelid. While a strip of false eyelashes can be applied in a single motion, 45 false eyelashes are easily distinguishable from the individual's natural eyelashes and may be uncomfortable when worn for extended periods of time.

BRIEF DESCRIPTION OF THE DRAWINGS

Various embodiments are illustrated by way of example and not limitation in the accompanying drawings, in which like references indicate similar elements. Various objects, features, and characteristics of the present invention will 55 become more apparent to those skilled in the art from a study of the Detailed Description in conjunction with the accompanying drawings.

- FIG. 1 depicts the upper tightline, upper lash line, and upper waterline of an eyelid.
- FIG. 2 depicts clusters of artificial lashes that can be used by professional lash technicians and cosmeticians.
- FIG. 3A depicts how multiple clusters of artificial lashes can be connected to form a bundle (also referred to as a "lash fusion").
- FIG. 3B is a side view of two different styles of lash fusion.

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- FIG. 3C illustrates how a set of multiple lash fusions can be secured to an individual's lashline in a single motion.
- FIG. 4 illustrates how multiple lash fusions within a set can be positioned in a specified arrangement.
- FIG. 5 depicts how the arrangement of the set of lash extensions enables all of the lash fusions to be simultaneously grasped by an applicator.
- FIG. 6 depicts how the set of lash fusions can be placed underneath an individual's natural lashes, where the plastic represents the individual's eyelid.
- FIG. 7 depicts how an adhesive can be applied to the top of an entire set of lash extensions or to the lash fusions that make up the set.
- FIG. **8** depicts a flow diagram of a process for manufacturing a lash fusion including multiple clusters of artificial lashes.
 - FIG. 9 depicts a flow diagram of a process for applying a set of lash extensions to an individual's natural eyelashes.

The figures depict various embodiments for the purpose of illustration only. Those skilled in the art will readily recognize that alternative embodiments may be employed without departing from the principles of the present invention. The claimed subject matter is intended to cover all modifications, equivalents, and alternatives falling within the scope of the present invention as defined by the appended claims.

DETAILED DESCRIPTION

Conventional eyelash extensions (or simply "lash extensions") are individually adhered to an individual's eyelashes one-by-one in order to prevent the eyelash extensions from sticking together. However, because the average individual might have anywhere from thirty to eighty lashes per eye, the application process can take several hours to attach a full set of eyelash extensions.

Introduced here, therefore, are techniques for creating clusters of artificial lash extensions that can be applied to an individual's natural eyelashes. Clusters of artificial lashes 40 include multiple artificial hairs made of natural materials (e.g., silk or authentic mink hair) or synthetic materials (e.g., acrylic resin, polybutylene terephthalate (PBT), or synthetic mink hair made of polyester). A cluster of artificial lashes generally includes approximately 10 to 30 artificial hairs (and preferably 10 to 20 artificial hairs). Clusters of artificial lashes are initially formed using, for example, a hot melt method in which artificial lashes are heated. For example, in some embodiments linear artificial lashes are heated at one end such that they begin to fuse to one another at that end, 50 while in other embodiments linear artificial lashes are heated near a central point and folded underneath one another. Clusters of artificial lashes have conventionally been made available only to professional lash technicians and cosmeticians.

Multiple clusters can then be fused together to form a bundle (also referred to as a "lash fusion") that can be applied along the upper tightline in a single motion. As shown in FIG. 1, the upper tightline is interposed between the upper lash line and the upper waterline. While certain embodiments have been described in the context of lash fusions that include multiple clusters, those skilled in the art will recognize that a lash fusion could also include a series of individual artificial hairs that are connected to one another.

More specifically, a lash fusion can include multiple clusters that are fused together near the inner ends of the artificial lashes (also referred to as the "base" of the lash

fusion) to form a straight line of artificial hairs that can be placed underneath an individual's natural lashes. For example, the multiple clusters can be fused together (e.g., via a heat seal process) approximately 1-5 millimeters (mm) above the base via crisscrossing artificial hairs. In some 5 embodiments, the multiple clusters are fused together approximately 1.5-2.5 mm above the base. The distance from the base at which fusing occurs may depend on the desired fan-out of the artificial lashes (e.g., shorter distances may cause a larger fan-out). Adjacent clusters can be secured 10 to one another when the intersecting portions of the crisscrossing artificial hairs are fused together. Such a technique allows a set of multiple lash fusions to appear seamless and blend in with an individual's natural lashes.

The base of the lash fusion (i.e., where the multiple 15 clusters are fused together) is intended to be affixed to an individual's natural lashes. The lash fusion may be approximately 4-8 mm wide. A lash fusion could include 3-10, 3-7, 5-10, 5-7, or 4-6 clusters. Accordingly, a lash fusion could include 30-150, 30-120, or 30-90 individual artificial hairs. 20

A set of multiple lash fusions can then be formed by arranging the multiple lash fusions next to one another in a form that matches the curvature of the upper tightline along the base of an eyelid. While the multiple lash fusions are typically not connected to one another (e.g., are not fused 25 together using heat, an adhesive, etc.), the entire set can be applied to the underside of the individual's natural lashes in a single motion. A set could include 3-8, 3-5, 5-8, or 4-6 lash fusions. Accordingly, a set could include 150-360 individual artificial hairs.

The number of lash fusions in a set may vary. In fact, because the multiple lash fusions are typically not secured to one another, an individual could decide to apply part of a set (e.g., five lash fusions rather than six lash fusions) based on the desired density.

Density of the artificial hairs may vary across the width of the eyelid. In some embodiments the artificial hairs are distributed evenly across the entire tightline (i.e., each cluster/lash fusion can include a substantially similar number of artificial lashes), while in other embodiments the 40 artificial hairs are more densely populated in certain area(s) of the tightline (i.e., some clusters/lash fusions may include fewer artificial lashes than others). For example, density may be lower along the outer edge opposite the tear duct.

An adhesive may be applied to the top of each lash fusion 45 within a set during the manufacturing process, which enables an individual to easily apply the set of lash fusions directly to the underside of the individual's eyelashes rather than to the individual's eyelid. Additionally or alternatively, the individual could apply an adhesive before applying the 50 set of lash fusions to the individual's natural eyelashes. For example, the individual may apply an adhesive to the set of lash fusions before applying the set of lash fusions to the natural eyelashes. As another example, the individual could apply an adhesive directly to the natural eyelashes. The 55 adhesive could be a waterproof glue or mascara.

Terminology

Brief definitions of terms, abbreviations, and phrases used 60 throughout this application are given below.

Reference to "one embodiment" or "an embodiment" means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the disclosure. The appearances of the phrase "in some embodiments" are not necessarily referring to the same embodiment, nor are they necessarily

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referring to separate or alternative embodiments that are mutually exclusive of one another.

The terms "connected," "coupled," or any variant thereof includes any connection or coupling between two or more elements, either direct or indirect. The coupling or connection between the elements can be physical, logical, or a combination thereof. For example, two components may be coupled directly to one another or via one or more intermediary channels/components. The words "associate with," meanwhile, mean connecting or relating objects, items, etc.

System Topology Overview

FIG. 2 depicts clusters of artificial lashes that can be used by professional lash technicians and cosmeticians. Each cluster of artificial lashes includes multiple artificial hairs that consist of natural materials (e.g., silk or authentic mink hair) or synthetic materials (e.g., acrylic resin, PBT, or synthetic mink hair made of polyester).

Clusters of artificial hairs typically include 10 to 30 hairs that are heated (e.g., as part of a hot melt process) and then secured to one another. For example, in some embodiments linear artificial lashes are heated at one end such that they begin to fuse to one another at that end, while in other embodiments linear artificial hairs are heated near a central point and folded underneath one another.

In some embodiments, some or all of the artificial hairs within a cluster may be tied to a support thread (i.e., knotted). The artificial hairs may be tied by any such means, such as a slip knot that prevents horizontal spreading of the cluster.

FIG. 3A depicts how multiple clusters of artificial lashes can be connected to form a bundle (also referred to as a "lash fusion"). More specifically, the lash fusion can include multiple clusters that are fused together near the base to form a straight line of artificial hairs that can be applied along the upper tightline.

For example, the multiple clusters can be fused together (e.g., via a heat seal process) approximately 1-5 mm above the base via crisscrossing artificial hairs. In some embodiments, the multiple clusters are fused together approximately 1.5-2.5 mm above the base. Adjacent clusters can be secured to one another when the intersecting portions of the crisscrossing artificial hairs are fused together. Such a technique allows a set of multiple lash fusions to appear seamless and blend in with an individual's natural lashes.

The intersecting portions of the crisscrossing artificial hairs could also be connected using an adhesive (i.e., rather than being fused together via a hot melt process). In such embodiments, the multiple clusters may be exposed to a curing assembly (e.g., a heater, dryer, or light source) that causes the adhesive to solidify. Artificial lashes made of natural materials (e.g., human or authentic mink hair) are typically connected using a glue or other adhesive rather than through the hot melt process.

A lash fusion could include 3-10, 3-7, 5-10, 5-7, or 4-6 clusters. Accordingly, a lash fusion could include 30-90 individual artificial hairs. Here, for example, a first style of lash fusion includes nine clusters, while a second style of lash fusion includes five clusters.

Note, however, that both styles could include the same number of artificial lashes. For example, the first style of lash fusion may include nine clusters of five artificial lashes each, while the second style of lash fusion may include five clusters of nine artificial lashes each. Both styles could also include different numbers of artificial lashes (e.g., the first

style may include a higher density of artificial lashes, and thus be more appropriate for placement near the tear duct).

Lash fusions may be 4-8 mm wide, though embodiments are often 5-6 mm wide. This is much wider than conventional clusters (which are 1.5-2 mm wide), and thus provide 5 greater coverage along the eyelid.

FIG. 3B is a side view of two different styles of lash fusion. The multiple clusters of each lash fusion can be fused to one another (e.g., during a hot melt process). Such a design provides several advantages over conventional clusters of lash extensions.

For example, because the multiple clusters can be heat sealed to one another, the total height at the base of the lash fusion is only 0.05-0.15 mm. Conventional clusters, meanwhile, use a string at the base to connect the artificial hairs to one another. But the presence of the string causes the total height at the base of the cluster to exceed 0.3 mm (e.g., typically 0.3-0.7 mm).

Moreover, the lash fusions described here have no quantifiable weight. Therefore, the lash fusions can more easily adhere to an individual's natural lashes and remain secured for longer periods of time. Again, the presence of the string causes conventional clusters to have a quantifiable weight that affects how they must be adhered to the individual's 25 natural lashes.

FIG. 3C illustrates how a set of multiple lash fusions can be secured to an individual's lashline in a single motion. A set can include multiple lash fusions that are arranged to match the curvature of the upper tightline of an eyelid. For 30 example, multiple lash fusions may be arranged such that the inner ends (i.e., the bases) form a concave shape that substantially complements the universal tightline of nearly any human eye. In some embodiments, sets preferably include five to seven distinct clusters of artificial lashes. The 35 number of lash fusions within each set (as well as the number of clusters within each lash fusion) may be based on the thickness of the artificial hair used, the desired style of the eyelid on which the set is intended to be affixed, the desired lash density (also referred to as "fullness" of the 40 individual's lashes), etc. As shown in FIG. 3C, the set of lash fusions is aligned with the tightline rather than the lash line, and then affixed to the underside of the individual's natural lashes. Said another way, the set of lash fusions is applied directly to the underside of the natural lashes rather than to 45 the eyelid.

An adhesive can be applied to the top of each lash fusion in the set, which enables an individual to easily apply the set directly to the natural lashes. The individual responsible for applying the set of lash fusions could be a person who affixes 50 the lash fusions to herself or some other person (e.g., a professional lash technician or a cosmetician). In some embodiments, the adhesive is applied when the lash fusions and/or the set are initially manufactured. Additionally or alternatively, the individual could apply an adhesive before 55 attaching the set of lash fusions to the individual's natural lashes.

The adhesive could be a waterproof (semi-permanent) glue, mascara, or some other co-polymer solution having an adhesive quality. Although latex-based adhesives are generally avoided to avoid irritation of the individual's eyelid (e.g., due to an allergic reaction), adhesives can include various other natural and/or chemical ingredients. Examples of possible adhesives include:

Arcrylates/ethylhexyl acrylate copolymer, aqua, propyl- 65 ene glycol, ceteareth-25, hydrogenated castor oil, glycerin, phenoxyethanol, 2-bromo-2-nitropropane-1,

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3-diol, methylcholoroisothiazolinone, methylisothiazolinone, methylparaben, and optionally a color agent (e.g., black 2 (Cl 77266));

Polyterpene, styrene/isoprene copolymer, petrolatum, polyisobutene, microcrystalline wax (cera microcristalina, cire microcrystalline), hydrogenated styrene/methyl styrene/indene copolymer, styrene/VA copolymer, and optionally an antioxidant (e.g., butylated hydroxytoluene (BHT));

Chlorine dioxide, p-anisic acid, biotin, lavandula angustifolio oil, propylene glycol, water, 2-ethylhexyl acrylate, and optionally a preservative (e.g., benzalkonium chloride); and

Acrylate copolymer and water.

Those skilled in the art will recognize that many other adhesive compositions are possible and, in fact, may be desirable for individuals having certain allergies, desiring certain fixation duration (also referred to as "permanency" of the lash extensions), etc.

Semi-permanent clusters of lash extensions may be applied with a Federal Drug Administration-approved (FDA-approved) adhesive that achieves a strong bond. Such adhesives generally include cyanoacrylate. Different types of cyanoacrylates (e.g., ethyl, methyl, propyl, butyl, and octyl) have been designed for bonding to different surfaces. For example, adhesives made from methyl-2-cyanoacrylateare are designed to bond a smooth surface (e.g., the lash extension) to a porous surface (e.g., the natural eyelash), but not on the skin as it may cause irritation.

FIG. 4 illustrates how multiple lash fusions within a set can be positioned in a specified arrangement. While the multiple lash fusions within the set will typically not be connected to one another, the multiple lash fusions can be arranged such that the set substantially complements the shape of an eyelid. More specifically, the curvature of the multiple lash fusions may substantially match the tightline curvature of an average person. Thus, an entire set of lash fusions may become substantially flush with the lash line when the set is arranged proximate to the tightline. Together, the multiple lash fusions form a set of lash extensions that can be collectively applied in a single motion.

FIG. 5 depicts how the arrangement of the set of lash extensions enables all of the lash fusions to be simultaneously grasped by an applicator. More specifically, an individual or a healthcare professional, such as a lash technician or cosmetician, can grasp an entire set of lash extensions using the applicator and simultaneously apply the entire set of lash extensions to the individual's natural eyelashes in a single motion.

FIG. 6 depicts how the set of lash fusions can be placed underneath an individual's natural lashes, where the plastic represents the individual's eyelid. As further described below, an adhesive is applied to the top of each lash fusion in the set of lash extensions. Consequently, the set of lash extensions can be applied directly to the underside of the individual's natural lashes proximate to the tightline, rather than to the eyelid above the lash line.

FIG. 7 depicts how an adhesive can be applied to the top of an entire set of lash extensions or to the lash fusions that make up the set. Additionally or alternatively, an adhesive could be applied to the individual's natural lashes. The adhesive applied to the artificial lash extensions may the same adhesive applied to the individual's natural lashes or a different adhesive.

Such a technique enables the individual to easily apply the set of lash extensions directly to the underside of the individual's natural lashes proximate to the tightline, rather

than to the individual's eyelid adjacent to the lash line. While multiple lash fusions are typically arranged with the intention that they be simultaneously grasped and applied to the individual's natural lashes, the individual could also individually apply the lash fusions.

The adhesive could be a semi-permanent glue or mascara. In some embodiments, the adhesive includes an oil-soluble polymer or a water-soluble polymer that helps to enhance adhesion and substantivity of the artificial lash extensions to the individual's natural eyelashes. The adhesive may be a 10 waterproof formulation that allows the set of lash extensions to remain affixed to the individual's natural lashes for longer periods of time (e.g., days, weeks, or months).

Although latex-based adhesives are generally avoided to avoid irritation of the individual's eyelid (e.g., due to an 15 allergic reaction), adhesives can include various other natural ingredients (e.g., sugar or honey) and/or chemical ingredients. For example, copolymer is often a main ingredient in many adhesive formulations. The adhesive could be a commercially-available adhesive for conventional lash extensions or a specialized composition for use with the set of lash extensions described herein. The adhesive could be clear or colored (e.g., milky white or black to emulate mascara).

FIG. 8 depicts a flow diagram of a process 800 for manufacturing a lash fusion including multiple clusters of 25 artificial lashes. Clusters of artificial lashes are initially formed using, for example, a hot melt method in which artificial hairs are heated and connected to one another (step 801). In some embodiments, linear artificial hairs are heated at one end such that they begin to fuse to one another at that 30 end, while in other. In other embodiments, linear artificial hairs are heated near a central point and folded proximate to the central point (i.e., so that a single artificial hair appears as two artificial lashes). Artificial hairs can then be overlapped (e.g., near the fused end or central fold) to form a 35 cluster.

The hot melt method requires that the multiple artificial hairs be heated to a temperature that is sufficient to cause the individual lashes to begin to melt. For example, artificial hairs made of PBT could be heated to approximately 40 55-110° C. at one end during a heat seal process (during which the heated ends begin to fuse to one another). Note, however, that clusters could include artificial hairs that consist of natural materials (e.g., silk or authentic mink hair) or synthetic materials (e.g., acrylic resin, PBT, or synthetic 45 mink hair made of polyester). While clusters may include 10 to 90 artificial hairs, most clusters include 10 to 30 artificial hairs.

Multiple clusters can then be connected together to form a lash fusion (step **802**). More specifically, the lash fusion 50 can include multiple clusters that are fused together near one end (i.e., the base) to form a straight line of artificial hairs that can be placed underneath an individual's natural lashes.

For example, the multiple clusters could be connected together using a hot melt method substantially similar to the 55 hot melt method used to form the individual clusters. As noted above, the hot melt method requires that the multiple clusters be heated to a temperature that is sufficient to cause the individual lashes to begin to melt. Thus, clusters made of PBT could be heated to approximately 55-110° C. (e.g., 65° 60 C.) near one end. For example, the clusters could be heated approximately 1.5-2.5 mm above the base. As the individual artificial hairs begin to melt, the multiple clusters will connect to one another near the base to form a straight line of artificial hairs, thereby forming a lash fusion.

As another example, the multiple clusters could be connected together using a glue or some other adhesive com-

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posed of various substances. In such embodiments, the clusters may be exposed to a curing assembly (e.g., a heater, dryer, or light source) that causes the adhesive to solidify. Thus, after multiple clusters have been formed (e.g., via a hot melt process), the multiple clusters may be glued to one another to form a lash fusion. Artificial lashes made of natural materials (e.g., human or authentic mink hair) are typically connected using a glue or other adhesive rather than through the hot melt process.

An adhesive (e.g., a pressure-sensitive adhesive) can then be applied to the top of the lash fusion (step 803). The adhesive may enable an individual to subsequently apply the lash fusion directly to the underside of the individual's natural lashes. Additionally or alternatively, the individual could apply an adhesive before applying the lash fusion to the natural lashes.

In some embodiments, multiple lash fusion are positioned in a specified arrangement to form a set of lash extensions (step 804). For example, 4-6 lash fusions could be arranged such that the inner ends (i.e., the bases) of the lash fusions form a concave shape that substantially complements the tightline of an eyelid. While the lash fusions are typically not connected to one another (e.g., are not fused together using heat, an adhesive, etc.), the entire set could be applied to the underside of the individual's natural lashes in a single motion.

FIG. 9 depicts a flow diagram of a process 900 for applying a set of artificial lash extensions to an individual's natural lashes. The set of lash extensions is initially acquired by the individual or a healthcare professional, such as a lash technician or cosmetician (step 901). The set of artificial lash extensions can include multiple lash fusions, each of which is comprised of multiple clusters of artificial lashes. The set of artificial lash extensions can then be grasped using an applicator (step 902). The applicator may be designed so that the entire set of artificial lash extensions (i.e., all of the lash fusions) can be seized and removed (e.g., from a surface to which the set of artificial lash extensions are attached) in a single motion.

In some embodiments an adhesive is applied to the top of each lash fusion in the set of artificial lash extensions (step 903), while in other embodiments an adhesive is applied to the top of each lash fusion in the set of artificial lash extensions during the manufacturing process. The adhesive could be, for example, a waterproof glue or mascara. The set of artificial lash extensions can then be arranged proximate to the tightline beneath the individual's natural lashes (step 904) and affixed to the underside of the individual's natural lashes (step 905), rather than to the individual's eyelid above the lash line.

Unless contrary to physical possibility, it is envisioned that the steps described above may be performed in various sequences and combinations. For instance, an adhesive could be applied to the individual clusters before or after the clusters are formed into lash fusions. Other steps could also be included in some embodiments.

Remarks

The foregoing description of various embodiments of the claimed subject matter has been provided for the purposes of illustration and description. It is not intended to be exhaustive or to limit the claimed subject matter to the precise forms disclosed. Many modifications and variations will be apparent to one skilled in the art. Embodiments were chosen and described in order to best describe the principles of the invention and its practical applications, thereby enabling

those skilled in the relevant art to understand the claimed subject matter, the various embodiments, and the various modifications that are suited to the particular uses contemplated.

What is claimed is:

- 1. An artificial lash extension system comprising:
- a plurality of lash extensions, each of the plurality of lash extensions comprising:
 - a plurality of clusters of artificial hairs, each of the plurality of clusters comprising multiple artificial 10 hairs; and
 - one or more intersecting portions of the plurality of clusters, wherein at an intersecting portion of the one or more intersecting portions at least one of the multiple artificial hairs of a first cluster of the plurality of clusters cross at least one of the multiple artificial hairs of a second cluster of the plurality of clusters, wherein the first cluster is aligned adjacent to the second cluster, and wherein the first cluster and the second cluster are connected by an application of 20 heat at the intersecting portion.
- 2. The artificial lash extension system of claim 1, wherein each artificial hair of the multiple artificial hairs comprises two ends, and wherein the first cluster crosses the second cluster between the two ends of respective artificial hairs of 25 the first cluster and the second cluster.
- 3. The artificial lash extension system of claim 1, wherein the first cluster is directly adjacent to the second cluster.
- 4. The artificial lash extension system of claim 1, wherein each of the plurality of lash extensions is formed by at least 30 the application of heat.
- 5. The artificial lash extension system of claim 4, wherein the plurality of clusters are connected together at the one or more intersecting portions by at least the application of heat.
- 6. The artificial lash extension system of claim 5, wherein 35 the application of heat facilitates at least a partial melting of one or more of the respective artificial hairs at the intersecting portion.
- 7. The artificial lash extension system of claim 4, wherein the application of heat comprises heat sealing.
- 8. The artificial lash extension system of claim 4, wherein the application of heat comprises heat fusing.

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- 9. The artificial lash extension system of claim 1, wherein each of the plurality of lash extensions is further formed by an application of an adhesive.
- 10. The artificial lash extension system of claim 9, wherein the plurality of clusters are connected together at the one or more intersecting portions at least in part by the application of the adhesive.
- 11. The artificial lash extension system of claim 9, wherein the first cluster is connected to the second cluster at the intersecting portion at least in part by the application of the adhesive.
- 12. The artificial lash extension system of claim 9, wherein the multiple artificial hairs comprise a natural material.
- 13. The artificial lash extension system of claim 12, wherein the multiple artificial hairs comprise animal hair.
- 14. The artificial lash extension system of claim 12, wherein the multiple artificial hairs comprise at least one of silk or human hair.
- 15. The artificial lash extension system of claim 1, wherein the multiple artificial hairs comprise a synthetic material.
- 16. The artificial lash extension system of claim 15, wherein the multiple artificial hairs comprise polybutylene terephthalate (PBT).
- 17. The artificial lash extension system of claim 15, wherein the multiple artificial hairs comprise polyester.
- 18. The artificial lash extension system of claim 1, wherein at least part of the multiple artificial hairs of the each of the plurality of lash extensions are designed to attach to an underside of natural lashes.
- 19. The artificial lash extension system of claim 18, wherein the plurality of lash extensions are designed to attach to the underside of the natural lashes in an arrangement adjacent to one another under the natural lashes.
- 20. The artificial lash extension system of claim 18, wherein the at least part of the multiple artificial hairs of the plurality of lash extensions are designed to attach to the underside of the natural lashes proximate to a lash line.

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